19467/C/1

H. T. Percy -

87447.

BRITISH ENTOMOLOGY;

BEING

ILLUSTRATIONS AND DESCRIPTIONS

OF

THE GENERA OF INSECTS

FOUND IN

GREAT BRITAIN AND IRELAND:

CONTAINING

Coloured Figures from Nature

OF THE MOST RARE AND BEAUTIFUL SPECIES, AND IN
MANY INSTANCES OF THE PLANTS UPON WHICH
THEY ARE FOUND.

BY

JOHN CURTIS,

FELLOW OF THE LINNEAN SOCIETY.

VOL. III.

LONDON:

PRINTED FOR THE AUTHOR; AND SOLD BY JOHN CUMBERLAND, 19 LUDGATE HILL; SHERWOOD, GILBERT, AND PIPER, 20 PATERNOSTER ROW; SIMPKIN AND MARSHALL, STATIONERS' COURT; J. BOOTH, DUKE STREET, PORTLAND PLACE; GOSSLING AND EGLEY, 69 NEW BOND STREET; AND G. B. SOWERBY, 156 REGENT STREET.

1826.

WELLCOME
HISTORICAL
MEDICAL
LIBRARY

PRINTED BY RICHARD TAYLOR,
SHOE-LANE, LONDON.

TO

WILLIAM JACKSON HOOKER, LL.D. F.R.S. &c.

PROFESSOR OF BOTANY,

TO WHOSE KINDNESS AND EARLY ENCOURAGEMENT

THE AUTHOR

IS GREATLY INDEBTED FOR HIS LOVE OF THE SCIENCE

TO WHICH HE IS SO STRONGLY ATTACHED,

AND FROM THE INVESTIGATION OF WHICH

HE DERIVES SO MUCH PLEASURE,

THIS VOLUME,

ILLUSTRATING

MANY OF THE LOCAL INSECTS AND PLANTS OF SCOTLAND,

IS DEDICATED,

AS A SMALL BUT SINCERE TRIBUTE OF HIS REGARD

AND RESPECT.

London, Jan. 1, 1826.

ALPHABETICAL INDEX OF INSECTS TO VOL. III.

Plate.
Achatea spreta, *Pine-destroying Achatea* . . . 117
Achenium depressum, *Depressed Achenium* . . . 115
Acronycta Salicis, *Scotch Acronycta* . 136
Alcis sericea, *Satin Beauty* . . . 113
Alomya victor, *Scotch Alomya* . . 120
Alysia Apii, *Celery-feeding Alysia* . 141
Anarta Myrtilli, *Beautiful Yellow Underwing* . . . 145
Andrena Kirbii, *Kirbian Andrena* . 129
Badister cephalotes, *The large-headed Badister* . . . 139
Bibio venosus, *Veined Bibio* . . . 138
Bledius Skrimshirii, *Skrimshirian Bledius* . . . 143
Boreus Hyemalis, *The Winter Boreus* 118
Brephanotha, *Light-orange Underwing* 121
Byrrhus Dennii, *Denny's Byrrhus* . 135
Cacidula scutellata, *Spotted Cacidula* . 144
Cassida Salicorniæ, *Samphire Cassida* 127
Charissa operaria, *The Bute Charissa* 105
Chrysomela Adonidis, *Lincolnshire Chrysomela* . . . 111
Cnephasiabellana, *Northern Cnephasia* 100
Crambus radiellus, *Rayed Veneer* . 109
Craterina Hirundinis, *The Swallow's Fly* . . . 122
Demetrias monostigma, *The single-spotted Demetrias* . . . 119
Dendrophilus Sheppardi, *Sheppardian Hister* . . . 131
Dianous cærulescens, *Rough Dianous* 107
Dyticus dimidiatus, *Thick-horned Dyticus* . . . 99
Plate.
Erastria ostrina, *Beautiful Erastria* . 140
Eulophus damicornis, *The Kirbian Eulophus* . . . 133
Gasterophilus salutiferus, *Healthful Bot* . . . 146
Helobia Gyllenhalii, *Gyllenhal's Helobia* . . . 103
Henops marginatus, *Pale-margined Henops* . . . 110
Hilara cilipes, *Fan-footed Hilara* . 130
Hylurgus piniperda, *Pine-feeding Hylurgus* . . . 104
Hypera fasciculosa, *The pretty Hypera* . . . 116
Limenitis Camilla, *White Admiral* . 124
Macaria liturata, *Tawny-barred Angle* 132
Melecta punctata, *Spotted Melecta* . 125
Melophagus Ovinus, *Sheep Louse* . 142
Odynerus parietinus, *Clear-winged Mason-wasp* . . . 137
Œstrus pictus, *The Deer Bot* . . 106
Pæderus fuscipes, *New Forest Pæderus* . . . 108
Panurgus ursinus, *Hairy Panurgus* . 101
Platyura flavipes, *Yellow-legged Platyura* . . . 134
Pyrausta cingulalis, *Silver-barred Sable* . . . 128
Pulex Talpæ, *Mole's Flea* . . . 114
Rhyphus fenestralis, *Domestic Rhyphus* . . . 102
Tetratoma ancora, *Black-and-yellow Tetratoma* . . . 123
Tyrophaga Casei, *Cheese-feeding Fly* 126
Zonitis testacea, *Testaceous Zonitis* . 112

ALPHABETICAL INDEX OF PLANTS.

Plate.
Agaricus flavipes? *Yellow-stalked Agaric* . . . 123
Ajuga reptans, *Common Bugle* . . 139
Anethum Fœniculum, *Common Fennel* . . . 126
Apium graveolens, *Wild Celery* . . 141
Arabis thaliana, *Common Wall Cress* . 146
Aster Tripolium var. β, *Sea Star-wort* 114
Borago officinalis, *Common Borage*. . 137
Bromus mollis, *Soft Brome-grass* . 128
Calluna vulgaris, *Common Ling* . 145
Chrysosplenium oppositifolium, *Opposite-leaved Sengreen* 110
Plate.
Cineraria integrifolia, *Mountain Flea-wort* . . . 101
Circæa lutetiana, *Enchanter's Nightshade* . . . 140
Cochlearia Danica, *Danish Scurvy-grass* . . . 127
Cynosurus cristatus, *Crested Dog's-tail Grass* . . . 135
Dentaria bulbifera, *Bulbiferous Coral-wort* . . . 144
Draba verna, *Common Whitlow-grass* 122
Epilobium tetragonum, *Square-stalked Willow-herb* . . . 113

INDEX.

Plate.
Funaria hygrometrica, *Little Golden-locks* 143
Galeopsis versicolor, *Large-flowered Hemp-nettle* 116
Gentiana campestris, *Field Gentian* . 105
Geranium sanguineum, *Bloody Crane's-bill* 100
Glechoma hederacea, *Ground Ivy* . 125
Hydrocotyle vulgaris, *Pennyrot*, &c. 142
Hypnum alopecurum, *Fox-tail Feather-moss* 111
Hypnum velutinum, *Velvet Feather-moss* 118
Iris fœtidissima, *Stinking Flag* . . 131
Lamium album, *White Archangel* . 132
Leucojum æstivum, *Summer Snow-flake* 108
Littorella lacustris mas., *Plantain Shore-weed* 107
Plate.
Lonicera Caprifolium, *Pale Perfoliate Honeysuckle* 124
Mespilus Cotoneaster, *Dwarf Quince* 129
Narthecium ossifragum, *Lancashire Asphodel* 115
Paris quadrifolia, *Herb Paris* . . 138
Poa rigida, *Hard Meadow-grass* . . 134
Salicornia herbacea, *Marsh Samphire* 119
Salix 121
Saxifraga aizoides, *Yellow Mountain Saxifrage* 103
Silene acaulis, *Moss Catchfly* . . . 109
Solanum Dulcamara, *Bitter-sweet* . 102
Stellaria holostea, *Greater Stitch-wort* 130
Trientalis europæa, *Chickweed Winter-green* 120
Valeriana dentata, *Oval-fruited Corn-salad* 106
Veronica agrestis, *Germander* . . 133
Vinca minor, *Less Periwinkle* . . 112

ERRATA AND ADDENDA.

Folio.	Line.	
*14a	23	*for* Omoptera *read* Omaloptera.
58		The genus *Cryptus* has been recently named *Schizocerus*, which, for reasons given in our text, we shall adopt.
63a	3rd from the bottom,	*for* female *read* male.
69	29	*for* 2 *read* 3 submarginal cells.
82a	6	*for* anterior *read* interior.
87	22	*for* spheciform *read* fusiform
106a	22	*after* Bovis *omit* Linn.
110a	35	*for* laid *read* lay.
111a	5th line from the bottom,	*for* 4 *read* 3 distinct transformations.
114		Since the genus *Pulex* was published, we have been favoured with specimens of *P. Hirundinis* by Thomas Carpenter, Esq., who has pointed out the antennæ, which in this species are as long as the head, placed above the eyes, and are received when at rest into a deep groove, and when erected look like the ears of a rabbit; they are 4-jointed, the basal joint having a few long bristles.—The trophi are similar to those of *P. Canis*, but the maxillæ are more slender and acute.
126		The genus *Tyrophaga* is we believe *Piophila* of Fallen.
127		—— This line shows the length of the *Cassida* figured, which was omitted in the plate: it is more than one-fifth the length of the magnified figure.
129a	4th line from the bottom,	*for* Llandidus *read* Llandidno.
140a	23	*after* unca *add* Hüb., Haw.—uncana.
141	3	*for* Order Coleoptera *read* Order Hymenoptera.

For an explanation of the terms used in this Work, the reader is referred to Kirby and Spence's Introduction to Entomology, Samouelle's Useful Compendium, and Stewart's Elements of Natural History.

Purchasers are recommended to have their volumes put in Boards only, until the work is completed, when a Systematic Arrangement of the whole will be given.

Binders are requested on no account to beat the Volume, until it has been published a sufficient time to prevent the ink being transferred by pressure.

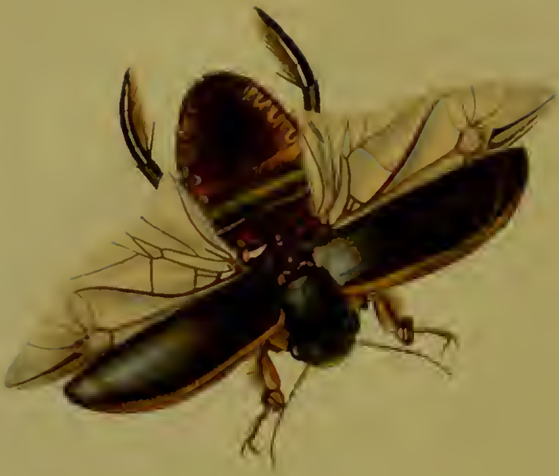
---

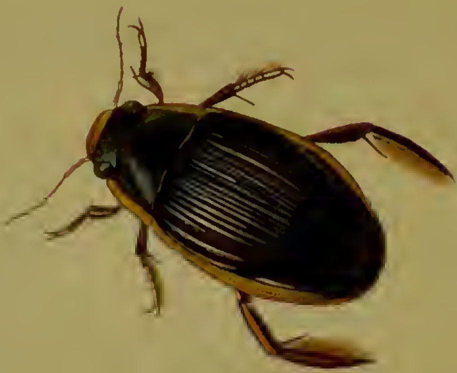
* Wherever the letter a follows the number of the Folio, it indicates a reference to the second page of that Folio.

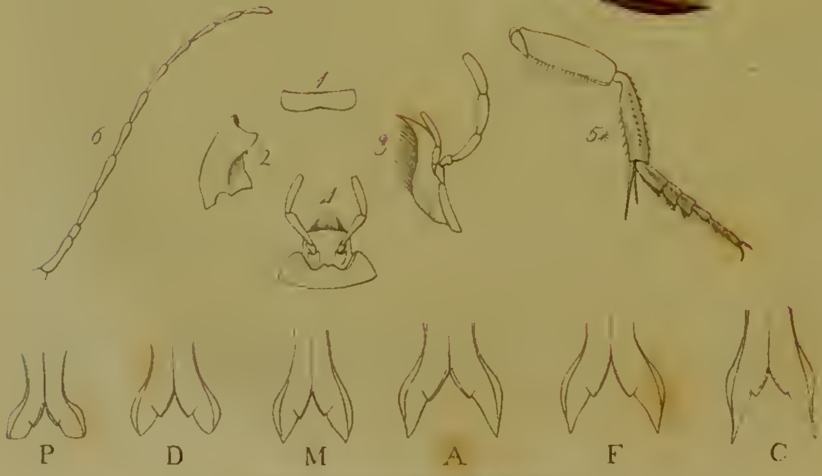
LIST OF SUBSCRIBERS.

Rev. T. Ainger, Greenwich.
William Aird, Esq., Hackney.
J. C. Allman, Esq., Bandon.
Charles Anderson, Esq., Lea, Lincolnshire.
Mr. E. T. Artis, F.S.A. & G.S., Milton, Peterborough.
John Atkinson, Esq., F.L.S., Leeds.
Mr. Bailey, Gloucester Road, Brompton.
Mr. Bainbridge, London.
W. Ballantine, Esq.
P. Barrow, Esq., Manchester.
Edward Bates, Esq., Huntingdon.
Mr. Beck, Globe Terrace, Mile End.
John James Bedingfield, Esq., Ditchingham Hall, Norfolk.
E. T. Bennett, Esq., F.L.S., Edward-st.
Mr. Bentley, City Road.
James Ebenezer Bicheno, Esq., Sec. of Linn. Soc., Furnival's Inn.
Rev. C. S. Bird, Burghfield, Reading.
Michael Bland, Esq., F.R.S. L.S. &c. 1 copy and proofs.
Capt. Chas. Blomer, Bideford, Devon.
W. J. Broderip, Esq., F.L.S. G.S. H.S.
Robert Browne, Esq., Welbeck-st.
Mrs. R. Browne.
J. Browne, Esq., Hetherset, Norfolk.
Edward Browne, Esq., Norwich.
Henry Browne, Esq , Norwich.
William Buckle, Esq., Peterborough.
John Burnet, Esq., Cadogan-place, Chelsea.
T. Carpenter, Esq., Calthorpe-street.
Miss Carter, High Wycomb, Buckinghamshire.
Samuel Cartwright, Esq., Old Burlington-street.
Mr. Richard Chambers, F.L.S., Castle-street, Leicester-square.
Mr. Chant, City Road.
L. J. Chaumette, Esq., London.
William Clear, Esq., Cork.
Abraham Cooper, Esq., R.A.
Cork Royal Institution.
Rev. Charles Cornwallis, Wrentham, Suffolk.
Mrs. Curties, Herondon House, Tenterden.
J. C. Dale, Esq., M.A. F.L.S., Dorset.
S. P. Denning, Esq., Dulwich College.
P. H. Desvignes, Esq., Hunter-street.
Lord De Tabley, Tabley House, Cheshire.
Mrs. Drake, Barnstaple, Devonshire.
H. M. Dyer, Esq., F.H.S., Devonshire-place House.
Henry Ellison, Esq., Beverley.
Walter Etty, Esq., Lombard-street.
Mr. Charles Fox, Cadogan-place, Chelsea.
Rev. Thomas Lane Fox, Sturminster, Dorset.
Rev. Edmund Goodenough, D.D., Master of Westminster.
Thomas Gribble, Esq., London.
J. H. Griesbach, Esq., Park-street.
Thomas Groves, Esq., Holnest Lodge, Dorset.
William Hammond, Esq., Whetstone.
William Hammond, Esq., Great Coram-street.
Rev. J. Hampden, Stickland, near Blandford.
Luke G. Hansard, Esq., Bedford-sq.
H. S. Haslam, Esq., Bury, Lancashire.
Moses Haughton, Esq., Great Marlborough-street.
A. H. Haworth, Esq., F.L.S. & H.S., Chelsea.
Rev. J. S. Henslow, M.A. F.L.S. Professor of Botany, Cambridge.
William Hewitson, Esq., York.
T. C. Heysham, Esq., Carlisle.
Henry Hitchcock, Esq., London.
John Hogg, Esq., Leeds.
Henry Hole, Esq., Ebberley House, Devon.
T. Horsfield, M.D. F.L.S., Castle-st.
Miss Huddlestone, Newark-on-Trent.
Horticultural Society of London.
Mr. Ingpen, A.L.S. Gray's Inn Road.
Edward Isaac, Esq., London.
Edward Jenkins, jun., Esq., Thorpe Hall, Peterborough.

Benj. Kennedy, Esq., Upper Clapton.
Miss Kenrick, Oswalds, near Canterbury.
George Kenrick, Esq., Alwalton, Huntingdonshire.
Rev. William Kirby, M.A. F.R.S. L.S. &c. Barham, Suffolk.
Richard Latham, Esq., F.L.S. & H.S.
Wm. Lea, Esq., Mornington-place.
L. Leake, Esq., London.
Leeds Library.
Leeds Philosophical and Literary Society.
Monsieur Lefebure de Cerisy, Toulon.
Mrs. T. W. Lewis, Enfield Old Park.
John Lindley, Esq., F.L.S., H.S., &c.
Charles Lyell, jun., Esq., Temple.
J. J. Lister, Esq., Stoke Newington.
Thomas Lupton, Esq., Leigh-street.
Right Honourable the Earl of Malmesbury, Heron Court, Hants.
Alexander MacLeay, Esq., F.R.S. L.S. H.S. &c.
Mr. Mathews, A.L.S., Turnham Green.
J. F. Maubert, Esq., London.
Henry Meux, Esq., F.H.S., Theobalds Park.
Thomas Meynell, Esq.
P. Mitchell, Esq., London.
Miss Molesworth, Cobham Lodge, Surrey.
J. G. Morgan, M.D., Devonshire.
Walter Mudge, Esq., Islington.
Thomas Nisbett, Esq., Clapton.
Norwich Literary Institution.
Honourable Capt. Percy, R.N. F.L.S. Portman-square.
G. Pardoe, Esq., Bewdley, Worcestershire.
R. Podmore, jun., Esq., London.
Rev. B. Pulleyne, F.C. P.S., Holt, Norfolk.
Miss Russell, Cheshunt Park, Hertfordshire.
J. Salkeld, Esq., London.
Mr. Samouelle, A.L.S., British Museum.
R.W. Sievier, Esq., Southampton-row.
John Shelmerdine, Esq., Plymouth Grove, near Manchester.
John Sims, M.D. F.R.S. & L.S., Dorking, Surrey.
Howard Sims, Esq., Baltimore, America.
Rev. T. Skrimshire, South Creak, Norfolk.
R. H. Smales, Esq., Throgmorton-st.
Mrs. Robert Smirke, Stratford-place.
Thomas Smirke, Esq., Upper Fitzroy-street.
John Abel Smith, Esq., Grosvenor-square.
John Smith, Esq., North Lodge, Ripon.
W. R. Smith, Esq., Seymour-crescent.
R. H. Solly, Esq., F.R.S. F.A.S. &c.
J. Sparshall, Esq., F.L.S. Norwich.
G. Spence, Esq., Camberwell Terrace.
Rev. Edward Stanley, Alderley Rectory, Cheshire.
James Stark, Esq., Norwich.
J. F. Stephens, Esq., F.L.S., Leigh-street.
William Stephens, Esq., Piccadilly.
Charles Stokes, Esq., F.R.S. L.S. & A.S., 2 copies.
Robert Stone, Esq., F.L S., Bedingham Hall, Norfolk.
Mr. Stone, Ratcliffe.
J. Stride, Esq., Old Broad-street.
C. H. Studd, Esq., Melton, Suffolk.
Richard Taylor, Esq., F.S.A. Under Secretary of the Linnean Society.
W. Taylor, Esq., Birchin-lane.
P. W. Thomas, Esq., London.
James Thompson, Esq., George-st. Hanover-square.
Charles John Thompson, Esq., Upper Berkley-street, Portman-square.
Mrs. Wade, St. Mary's, Suffolk.
Sir Patrick Walker, Knt. F.R.S. L.S. &c., Edinburgh.
Mrs. Walker, Arno's Grove.
James Wadmore, Esq., Paddington, 1 copy and proofs.
Rev. James Webber, Little Cloisters, Westminster.
Mr. J. O. Westwood, Chelsea.
W. Witherington, Esq., Hadlow-st.
George William Wood, Esq., Manchester.






1
2
3
4
5*
6
P
D
M
A
F
C

DYTICUS DIMIDIATUS.

ORDER Coleoptera. FAM. Dyticidæ *Leach.* Hydrocanthari *Lat.*

Type of the Genus Dytiscus marginalis *Linn.*

DYTICUS *Geoff., Ill., Lat., Leach.* Dytiscus *Linn., Fab., Gyll.*

Antennæ inserted close to the eyes at the base of the mandibles, subsetaceous, naked, 11-jointed, basal joint the longest, 2nd very short, 3rd and following clavate decreasing in length to the terminal joint, which is slightly curved and truncated obliquely (fig. 6).

Labrum transverse, slightly emarginate, ciliated in the middle (1). *Mandibles* short, robust, emarginate at the apex, which is truncated obliquely (2).

Maxillæ small, bent, acute, ciliated internally with bristly spines. *Palpi; internal* short, 2-jointed, 1st joint shorter than the 2nd, which is slightly curved:—*external* long, 4-jointed, 1st joint small, 3 following long, of nearly equal length, subclavate, terminal joint truncated (3).

Mentum transverse, bilobed, with the centre slightly produced and emarginate. *Palpi* arising from a cylindric scape, 3-jointed, 1st joint minute, 2 following long of equal length, clavate truncate. *Labium* large, quadrate, ciliated (4).

Head *rounded.* Thorax *transverse.* Scutellum *distinct.* Elytra *convex ovate, smooth in the males, sulcated in the females.* Wings 2. Tibiæ *spurred, anterior short.* Tarsi 5*-jointed, anterior patelliform, with suckers beneath and ciliated in the males; 2nd pair with the 3 basal joints dilated, with suckers beneath in the males* (5*) *; posterior elongated.* Claws *simple, of equal length, small in the posterior pair.*

DIMIDIATUS *Ill. Mag.* 3. 155. 3. *Gyll. Ins. Suec. t.* 1. *p.* 469. *n.* 4.

Male smooth, shining, olivaceous-brown. Clypeus, palpi, a band between the antennæ, sides of the thorax, margins of the elytra, and an oblique line near their apex ochraceous; an angular mark between the eyes, anterior margin of thorax, antennæ and legs ferruginous, the antennæ at their base and the anterior legs being paler, the former with the 3 first joints robust. Thorax with a channel down the centre. Elytra with 3 longitudinal punctured striæ on each, obtuse, depressed and punctured at the apex. Lobes of the sternum beneath divaricating, obtuse. *Female:* Thorax minutely punctured. Elytra with 10 deep channels on each, extending scarcely beyond the middle, the remainder punctured.

In the Author's and other Cabinets.

WITH the exception of *Hydrous piceus*, the true *Dytici* are the largest insects that inhabit the waters of Europe, and until lately there were but 3 species recorded as British. As their habits and economy are similar to the *Acilii;* I shall prefer giving the specific characters, and must refer to the detailed accounts of De Geer, Roësel, and Latreille, for their histories.

I. Furcate process of sternum obtuse. Thorax not entirely margined with yellow.

1. D. punctulatus *Fab. Ent. Syst. v.* 1. *pars* 1. 188. 4. *Don. Brit. Ins.* 15. 540. *Panz. F. G.* 110. 13 & 14.

Much the smallest; sides only of thorax yellow. Antennæ robust, articulations short; each elytron of female with 9 striæ. Sternum very obtuse (fig. P).

2. dimidiatus *Gyll. Ins. Suec. v.* 1. *p.* 469. *n.* 4.

Much the largest, sides of thorax yellow, and a narrow ferruginous line at the other margins, 3 basal joints of antennæ much more robust than the others, each elytron of the female with 10 striæ, extending scarcely beyond the middle (D).

II. Furcate process of sternum acute. Thorax completely margined with yellow.

a. Anterior claws large in the males.

3. marginalis *Linn. Syst. Nat.* 2. 665. 7. *Don. Brit. Ins.* 5. 161. *Panz. F. G.* 86. 3 & 4.

Spines of sternum rather short, not very acute (M).

4. circumflexus *Fab. Syst. Eleut.* 1. 258. 4.

Spines of sternum slender, elongated, very acute (C).

b. Anterior claws small in both sexes.

5. angustatus *Stephens's MSS. Nobis.*

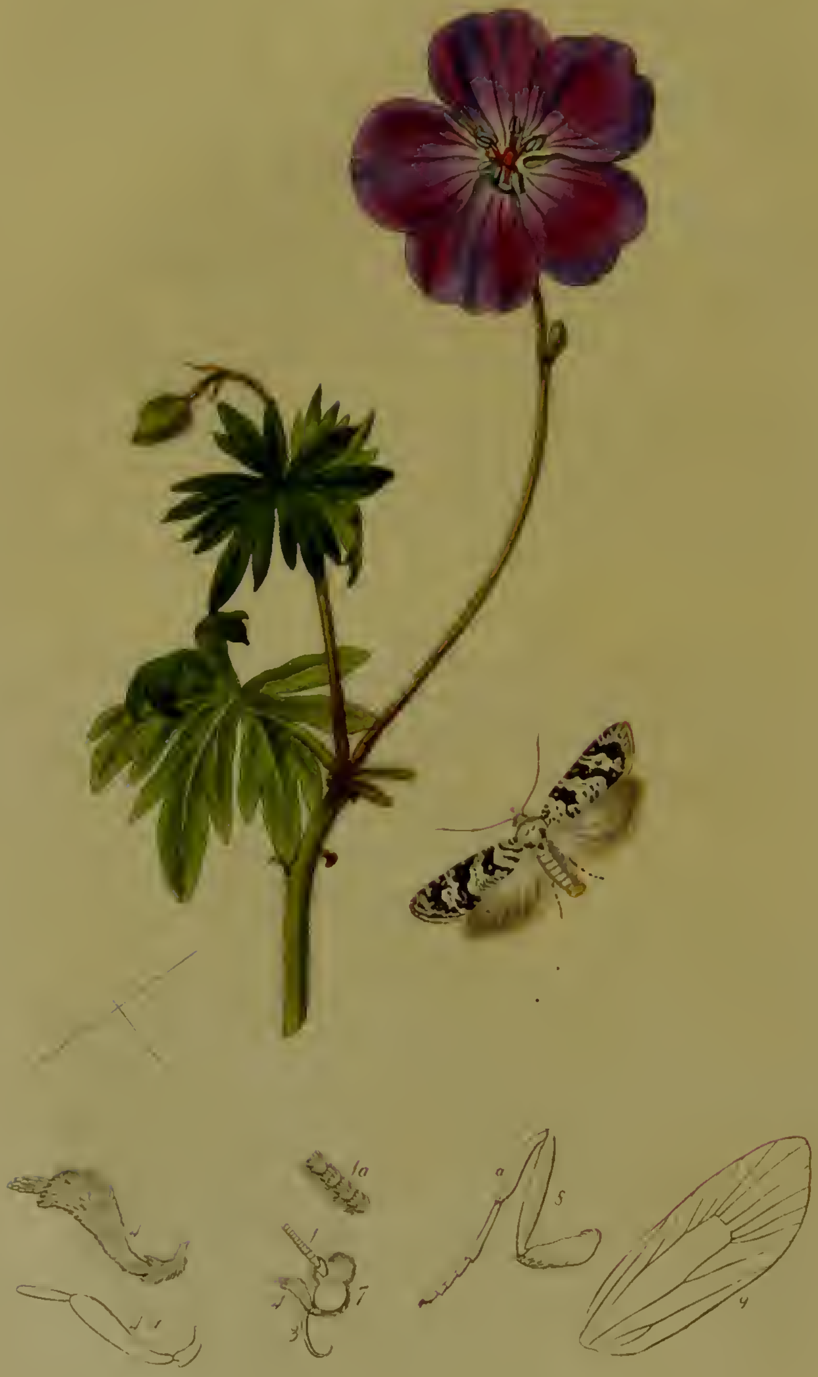
Spines of sternum diverging, considerably acute (A).

6. flavo-maculatus *Lat. Hist. Nat. ? v.* 8. *p.* 162. *n.* 3.

Elytra smooth in both sexes? Sternum like the last (F).

This last is a most extraordinary anomaly, respecting which the most learned entomologists are completely at variance. My specimen proving upon dissection to be a female, as well as 3 others dissected by Professor Bonelli, I cannot but consider it a variety of the female of *D. angustatus*, with which sex it perfectly agrees in structure, although in sculpture it has every appearance of the males of that species.

All the *Dytici* are found in ponds and ditches during May, June, and July. The fine species figured, as well as *D. angustatus*, were first discovered at Whittlesea Meer by Mr. Chant and Mr. Bentley, to whom I am indebted for examples of the different sternums by which the species are so easily distinguished; and Dr. Stephenson has since captured them in the same neighbourhood, and has obligingly favoured me with specimens.


1a
1
2
3
7
a
5
4
2
1

100.

CNEPHASIA BELLANA.

The Northern Cnephasia.

Order Lepidoptera. Fam. Tortricidæ *Leach.*

Type of the Genus Tortrix Logiana *Linn.*

Cnephasia *Nobis.* Phalæna Tortrix *Linn.* Pyralis *Fab., Lat.* Tortrix *Hüb., Haw., Leach.*

Antennæ inserted near the crown of the head close to the eyes, rather thickest in the middle, having a serrated appearance, composed of numerous quadrate joints covered with short scales and hair above, pubescent beneath (fig. 1, and 1 a).

Maxillæ scarcely longer than the palpi (3).

Palpi 2, porrected, completely covered with scales, 3-jointed, 1st curved upward, short, 2nd long clavate, with very long scales on the upper surface, 3rd short linear (4, and 4 a).

Head *with a tuft of scales upon the crown* (7). Abdomen *robust and tufted at the apex, especially in the females.* Wings *when at rest forming an elongated triangle, superior of the males narrower towards the base than in the females, somewhat lanceolate, and generally rounded at the apex* (9 *showing the nerves*). Legs *rather slender, anterior with the* 1*st joint of the tarsus nearly as long as the tibia* (8 a); *posterior with the femur short.* Tibia *very long, with* 2 *spines near the centre and* 2 *at the apex.* Tarsi *all* 5*-jointed, the basal joint being equal in length to the remainder.*

Caterpillars *with* 6 *pectoral,* 8 *abdominal, and* 2 *anal feet?*

Bellana *Nobis.*

Male hoary. Antennæ, eyes, and anterior legs blackish, the latter annulated with white. Superior wings with an angulated fascia near the base, an oblique one in the middle, and another imperfect one near the apex grayish black, variegated and spotted with intense black, 4 spots upon the costa near the apex and minuter ones on the interior margin and between the fasciæ grayish black. Inferior wings silvery gray, cinereous and obscurely reticulated towards the margins. Cilia silvery, tinged with ochraceous. Abdomen silvery, ochraceous at the apex. *Female* with the markings bolder and the black more intense on the superior wings, with an irregular row of black spots near their posterior margin.

In the Cabinets of Mr. Dale and the Author.

Having had the good fortune to add two nondescript species to this natural group in my late visit to Scotland, it has been thought advisable to form it into a genus. When at rest the wings of these insects are folded very differently to the *Tortricidæ* generally, bearing a stronger resemblance to the *Crambi*, which they will probably connect with the former family by means of *Chilo* passing through the *Inopianæ* of Haworth, being connected with the other *Tortrices* by means of his group *Fasciariæ:* the lanceolate wings, the slender anterior legs, and the bars of the superior wings, which may be traced even in the 8th species, are other important characters.

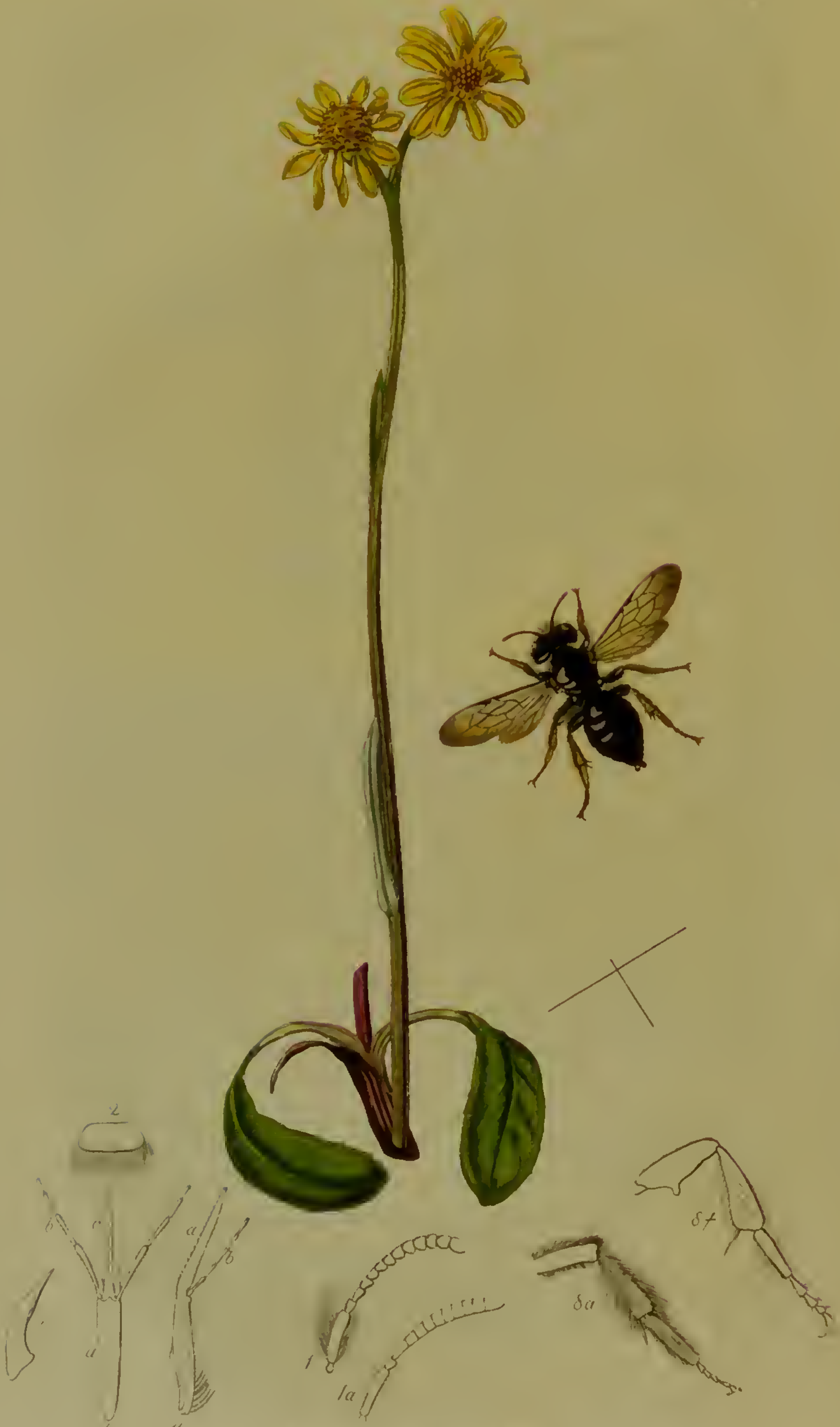
1. Cnephasia bellana *Nob.*
2. octomaculana *Haw. MSS.*
3. interjectana *Lep. Brit.*
4. Asinana *Hüb.—Lep. Brit.*
5. Logiana *Linn.—Lep. Brit.*
6. rectifasciana *Lep. Brit.*—trifasciana *Don. Brit. Ins. v.* 11. *pl.* 370. *f.* 2. 2.
7. longana *Lep. Brit.*
8. 4-punctana *Lep. Brit.*
9. Cantiana *Nob.*

The charming insect, a female of which is figured, is probably in its larva state a lichen feeder; the specimens I found were settled upon the face of the rocks on the left, ascending Arthur's Seat from Holyrood House; and from its similarity of colour to the lichen that is distributed over the rocks was very difficult to detect. It was easily secured, from its indisposition to fly during the day; its generic name signifies 'flying in the dusk'; the female is rarer than the male.

C. octomaculana I took on the borders of the Highlands, with so many rare and nondescript species, that I hope soon to have an opportunity of giving an account of them in a form that will be serviceable to entomologists, and induce others to explore the rich mines of the North.

C. Cantiana I have never seen except near Dover and at Darent, in the county of Kent, which has induced me to give it the specific name it bears: it is smaller than *C. 4-punctana*, which it most resembles; it is more silvery, nearly plain, and the superior wings are narrower and more acute.

The handsome *Geranium sanguineum* (Bloody Crane's Bill) ornamented the rocks with its beautiful flowers on the spot where the moth was taken.


2
b
c
a
b
d
a
1
1a
8a
8f

[illegible]

101.

PANURGUS URSINUS.

ORDER Hymenoptera. FAM. Apiariæ *Lat.* Apidæ *Leach.*

Type of the Genus Andrena lobata *Panz.*

PANURGUS *Panz., Lat., Leach.* Apis *Gmel., Kirby.* Dasypoda *Fab.* Andrena *Panz.* Trachusa *Jur., Panz.*

Antennæ approximating, inserted between the eyes, distinctly articulated, clavate in both sexes; 13-jointed in the males, basal joint long cylindric, hairy, 2nd small, 3rd cup-shaped, remainder pubescent, increasing in diameter to the last, which is conical (1): 12-jointed in the females, basal joint less hairy than in the males (1 a).

Labrum transverse-oval, narrowed at the base, cilia long and soft (2).

Mandibles long, bent, slender, acute, rough and slightly pilose, not dentated (3).

Maxillæ long, terminated by a pubescent and pilose lanceolate lobe (4 a).

Palpi shorter than the maxillæ, slender, 6-jointed, basal joint small, following longer, decreasing in length to the last, which is as long as the 2nd (b).

Mentum elongate-conic, apex tridentate (5 a). *Palpi* long slender, coriaceous membranaceous at their articulations, slightly hairy, 4-jointed, 1st joint long, clavate, the following decreasing in length to the end (b). *Tongue* lanceolate pubescent, scarcely so long as the palpi, with an acute lobe on each side at the base (c).

Head *broader than the thorax in the males.* Ocelli 3 *in triangle.* Abdomen *with the incisures slightly strangulated, somewhat conical and terminated by* 2 *lobes in the males; ovate more depressed, bearded and aculeated in the females.* Superior wings *with* 2 *marginal cells, one very small, and* 3 *submarginal cells, the external one scarcely complete, and the middle one receiving* 2 *recurrent nerves.* Hinder feet *pollinigerous.* Tibiæ, *posterior dilated towards the apex, very hairy in the females* (8 a). Tarsi 5*-jointed,* 1*st joint very long, broad, and hairy, especially in the females, the remainder small, pubescent only.* Claws *unidentate* (8 a *is the hinder leg, and* 1 a *the antenna of the female P. ursinus*).

URSINUS *Gmel. Linn. Syst. Nat. p.* 2790. *n.* 173. *Kirby Mon. Ap. Angl. v.* 2. *p.* 178. *n.* 1. *fem.*—and Banksiana, *p.* 179. *n.* 3. *mas.*

Male black, shining, hirsute. Wings pale fuscous; costa, stigma and squamulæ brown; nerves, lobes of abdomen and tarsi ferruginous. Tibiæ clothed with ochraceous hairs.—*Female* less robust than the male, apex of abdomen tufted with brown hairs, posterior tibiæ and basal joint of tarsus thickly covered with long fulvous hair.—Obs. Most of the soft pubescence is ciliated, as shown at the base of the maxilla (fig. 4).

In the Author's and other Cabinets.

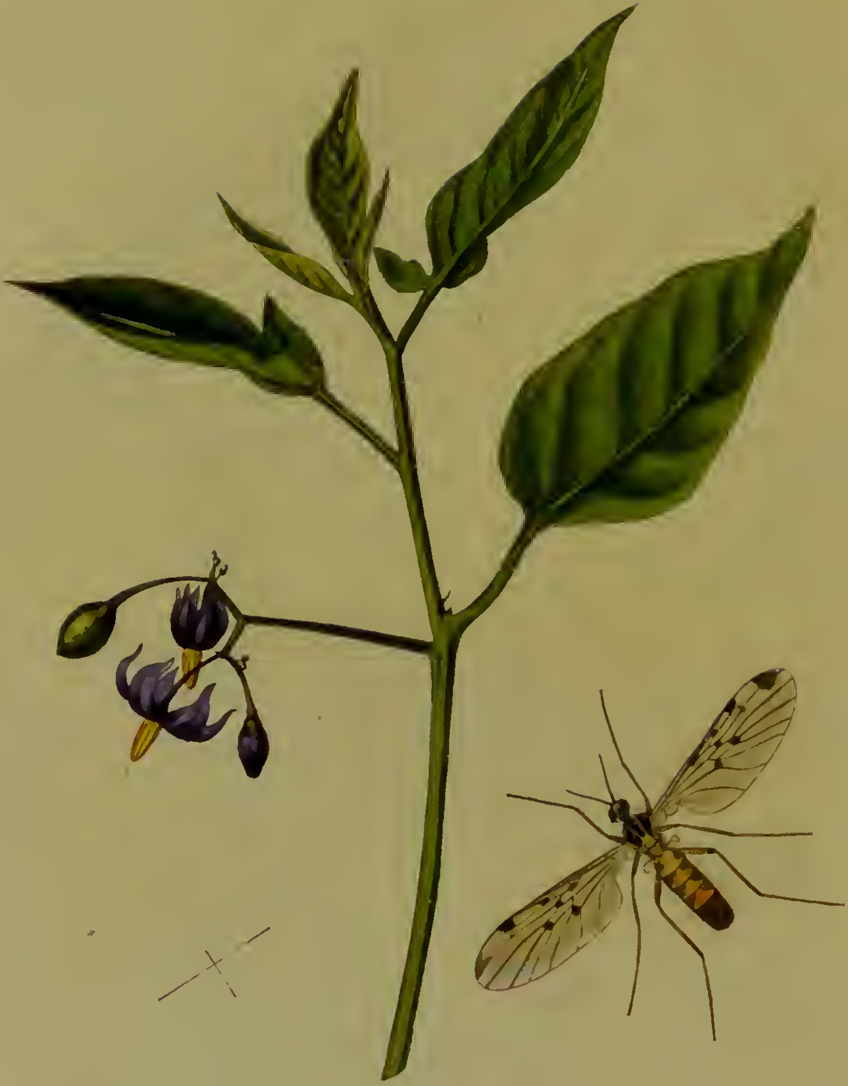
THE uniformity that prevails in the structure of these bees, especially in the similarity of the palpi and the antennæ of the sexes, renders it easy to distinguish them from the other *Apidæ*, and nothing can be more natural, I think, than the situation assigned to them by Mr. Kirby, for in habit they so much resemble *Dasypoda*, that Fabricius (who must have judged in this instance from analogy and not from dissection, as the mouth assumes the more developed form of the *Apidæ*) had included them in his last work in that genus; and on the other side they approach very near to *Nomada*, in the form of the palpi and other parts of the organs of manducation.

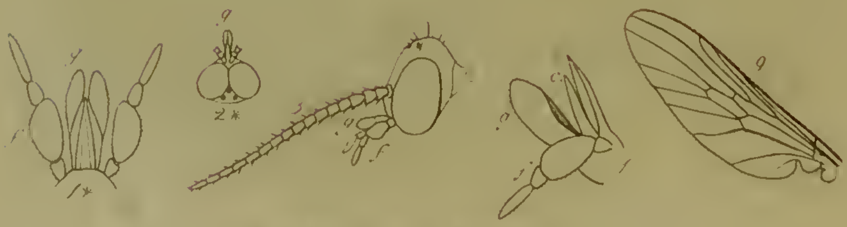
We have but 2 species of this genus; for as *Apis ursina*, and *A. Banksiana* of Kirby are constantly found together, the former being all females and the latter all males, it cannot be doubted that they are one species.

1. Panurgus ursinus, Mr. Kirby took upon a heath in Suffolk, in September, and in the middle of June I captured several of both sexes upon a sunny bank near Shooter's Hill. The female having been figured in the *Mon. Ap. Angl. tab.* 16. *f.* 1., I have preferred giving the male, being in doubt about Panzer's figure of *Trachusa atra*, *fasc.* 96. *pl.* 19. all the tibiæ being destitute of the fulvous pubescence.
2. P. lobata *Panz.* Both sexes of this rare insect are well figured in his *Faun. Ins. Germ. fasc.* 96. 18. male, and 72. 16. female. Having received specimens from Germany, and Mr. Stephens having allowed me to compare his specimen, which was the one in the late Mr. Marsham's collection, referred to by Mr. Kirby, there can be no doubt of their being the same species, although the figure in the *Mon. Ap. Angl. tab.* 16. *f.* 2. does not show the spines on the posterior thighs, as exhibited in our plate (fig. 8†), which are quite concealed, except when the legs are spread out; a proof of the utility of setting insects well when first taken, or of relaxing them afterwards, as recommended by Mr. Samouelle in his Useful Compendium, p. 321.

The female of *P. lobata* I have never seen; the males have been taken in September upon Martlesham Heath, near Woodbridge, Suffolk, by Mr. Kirby, whose specific name would most willingly have been adopted, had not Panzer published his previously. Latreille observes, that our bee is fond of semiflosculous flowers; we have consequently figured *Cineraria integrifolia* (Mountain Fleawort), communicated by Professor Henslow from the Gogmagog Hills.

102





[illegible]

RHYPHUS FENESTRALIS.

Order Diptera. Fam. Tipulidæ *Lat.*, *Leach.*

Type of the Genus Tipula fenestralis *Scop.*

Rhyphus *Lat.*, *Meig.* Tipula *Reau.*, *Scop.* Rhagio *Fab.* Sciara *Fab.*—Anisopus *Meig.*, *Ill.*

Antennæ alike in both sexes, inserted nearly in the centre of the face, porrected, longer than the head, attenuated, very hairy, 16-jointed, first 2 joints forming a base for the remainder, which increase in length to the end (fig. 3).

Labrum horny, as long as the lip, broad and acute (1 b).

Tongue shorter than the labrum, horny acute (c).

Mandibles and *Maxillæ* none.

Palpi exserted, incurved, longer than the lip, 4-jointed, 1st and 3rd joints small, 2nd very large, somewhat ovate, 4th elongate-ovate (f, f, f).

Lip not longer than the head, bilobed hairy (g, g, g, g).

Head *small globular.* Eyes *large ovate, contiguous in the males* (2*), *distant in the females.* Ocelli 3, *placed on the crown of the head in the females* (2), *and behind the eyes upon tubercles in the males* (2*). Thorax *gibbous.* Scutellum *semicircular.* Abdomen *nearly linear.* Wings *rather large, parallel, incumbent, ciliated, slightly pubescent, containing about* 15 *cells, the discoidal one being small and narrow* (9). Halteres *distinct, somewhat trigonate.* Legs, *anterior the shortest.* Tarsi 5*-jointed, basal joint the longest.* Claws *and* Pulvilli *minute.*

Fenestralis *Scop. Carn.* 322. 858. *Meig. Syst. Besc. v.* 1. *p.* 323. *n.* 3.—cinctus *Fab. Ent. Syst.* 4. 275. 15.—nebulosus *Meig. Klass. d. Zweif. t.* 6. *f.* 5.

Pale ochraceous. Eyes rufous. Antennæ black. Head and thorax slightly pubescent, cinereous, the latter with 3 longitudinal deep brown stripes. Abdomen pubescent, clouded with fuscous down the back on both sides and at the apex. Wings very iridescent, stained very pale fuscous, with a large spot at the apex, a darker brown one like a stigma, 2 others upon the marginal and 3 round the discoidal cell. Thighs and tibiæ of the 4 posterior legs and all the tarsi brown at their apex.

In the Author's and other Cabinets.

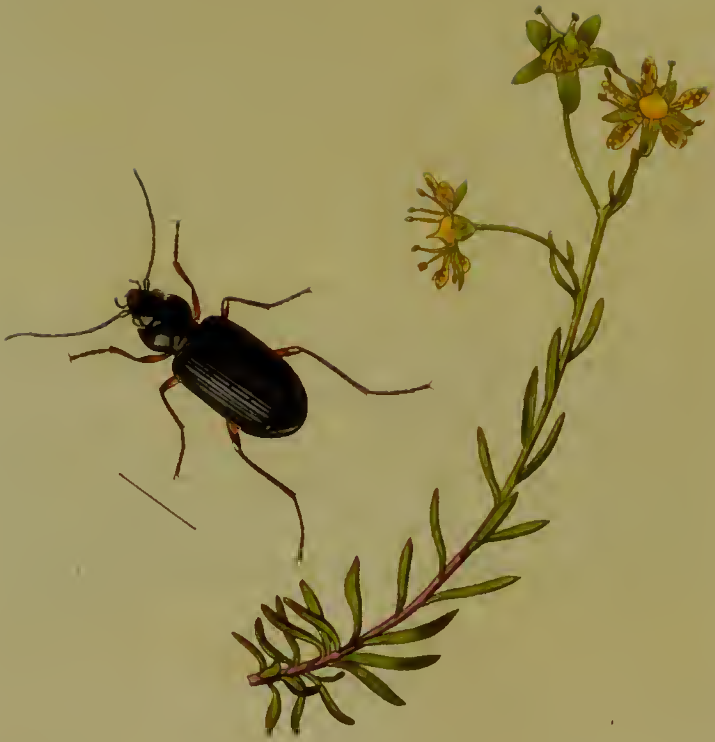
Of this genus there are but 3 species, all of which are British.

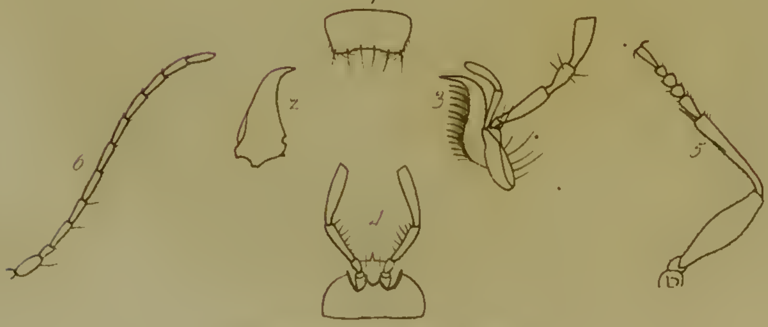
1. Rhyphus fuscatus *Fab.—Meig. Syst. Besc. v.* 1. *tab.* 11. *f.* 18.
2. punctatus *Fab.—Meig. Klass. d. Zweif. pl.* 6. *f.* 4.
3. fenestralis *Scop.*

This last is one of our commonest insects, being almost always to be found inside the windows of our houses. Although the other 2 species are by far more rare than *R. fenestralis*, they are well represented in Meigen's works: our species he has drawn with the wings closed, which renders it less satisfactory; and as I do not know of even a tolerable portrait of it, a figure of the female has been given in preference to the others.

Latreille says the larvæ inhabit houses, and feed upon decaying and moist linen; and Reaumur, who has figured *R. fenestralis* in its different states (*v.* 5. *tab.* 4. *f.* 3. 10), found the larvæ in the dung of cows: they soon became pupæ, and the fly appeared about 8 days after. The perfect insect, from its figure and markings, might be easily mistaken for some gnat; but the structure of the mouth is very different, not being armed in the formidable way that the *Culices* are. *R. fuscatus* I think I found beneath damp boleti; but as I have no memorandum respecting the specimens, it is doubtful.

The plant is *Solanum Dulcamara* (Bitter-sweet, or Woody Nightshade).




1
2
3
4
5
6

HELOBIA GYLLENHALII.

Order Coleoptera. Fam. Carabidæ *Lat., Leach.*

Type of the Genus Carabus brevicollis *Fab.*

Helobia *Leach's MSS.* Nebria *Lat., Clairv., Gyll.* Carabus *Linn., Fab., Marsh.*

Antennæ inserted between the eyes and the base of the mandibles, pubescent excepting the 4 basal joints, 11-jointed, 1st joint robust oval, 2nd short, 4th not so long as the 3rd, remainder of equal length (fig. 6).

Labrum transverse, narrowed anteriorly, emarginate, ciliated (1).

Mandibles rather small, curved, acute, with 1 or 2 small teeth near the base (2).

Maxillæ arched acute, ciliated internally. *Palpi; internal,* composed of 2 clavate joints of equal length :—*external,* very long, 4-jointed, 1st joint minute, 2nd long robust, clavate truncate, 3rd shorter clavate with a few bristles, 4th nearly as long as the 2nd and more robust, clavate truncate (3).

Mentum transverse, side lobes acuminated internally, centre one acutely bifid. *Palpi* nearly as long as the maxillary, 3-jointed, basal joint minute, 2nd long, clavate, pilose, 3rd long, clavate-truncate. *Labium* quadrate horny, with a spine in the centre (4).

Head *trigonate.* Thorax *cordate truncate, posterior margin straight.* Scutellum *minute.* Abdomen *depressed.* Wings 2. Legs *long and slender, formed for running, with trochanters at the base of the posterior.* Anterior tibiæ *slightly emarginate.* Tarsi 5*-jointed, anterior slightly dilated in the males* (5, *a fore leg*).

Gyllenhalii *Schön. Syn.* 1. 196. 163. *Gyll. Ins. Suec.* 2. 40. 3. *Sturm's Deut. Faun.* 5. 142. 3.

Black. Palpi, mandibles and antennæ slightly rufous at their extremities. Tarsi rufous, with a black spot at the apex of the 4 first joints.

Var. b. Piceous black, shining. Antennæ brownish, excepting the 4 basal joints, which with the palpi and mouth are piceous, sometimes inclining to ferruginous. Trochanters and legs ferruginous, apex of the thighs and the tibiæ generally fuscous, 4 basal joints of tarsi with a black spot above at their apex. Head smooth with several imperfect impressions, 2 between the eyes and 1 behind forming a triangle. Thorax smooth, margins coarsely punctured, especially at the base; with a transverse curved impression before and another parallel to the posterior margin, a channel down the centre, deepest in the middle; sides margined, reflexed, especially at the posterior angles, which are acute. Elytra smooth, with 1 abbreviated and 8 long minutely punctured striæ on each, with a fovea uniting the origins of the 2nd and 3rd striæ; 3 or 4 fovea between the 3rd and 4th, and 8 or 9 others upon the external stria.

In the Cabinets of Mr. Dale and the Author.

In the early part of this work (folio 6) we gave some account of the genus *Nebria*, from which the present little group has been separated by Dr. Leach, and we regret not being in possession of his characters as well as his MS. name which has been adopted: the principal distinctions are the narrowed labrum, the equal length of the joints of the internal, and the shortness of the 3rd joint of the external maxillary palpi, the more quadrate mentum, the horny and acuminated lip, and the slight emargination of the anterior tibiæ.

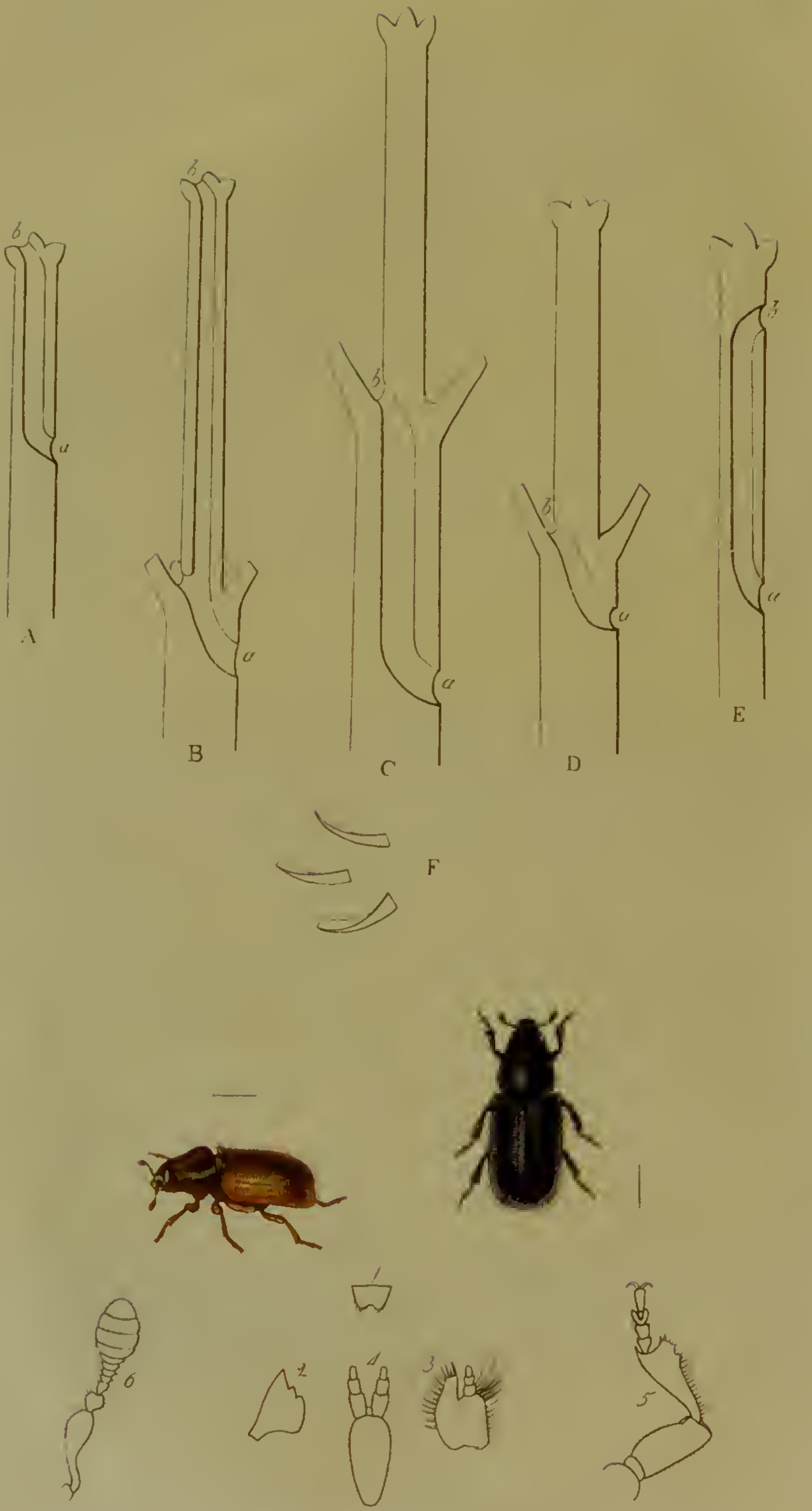
Our specimens of the rare insect figured (which has never been met with in England) were taken in a recent visit to Scotland by Mr. Dale and myself, who found many of them in July at a considerable elevation on the north side of Schichallien; and I again took them under fragments of stone near the summit of Craig-challoch, one of the Dochart hills near Killin. From the habitat, the punctured furrows on the elytra, and the colour of the legs of the specimen figured as a variety, with which many of my specimens accord, I should have considered it the *Carabus nivalis* of Paykul; but the specimens in the British Museum, one of which perfectly agrees with that figured, and the others with our description, were named by Dr. Leach *Helobia Gyllenhalii*, whose opportunities of examining authentic specimens being greater than our own, we have been induced to follow him. Gyllenhal also says of *Nebria nivalis*, "*Thorax brevissimus*;" whereas the thorax of our insect is not shorter in proportion than that of the type; and unfortunately I have not been able to find a specimen of *H. nivalis* in the British Museum or any cabinet I have had the opportunity of consulting.

Out of 20 or 30 specimens of our insect we had nearly an equal proportion of those with ferruginous tarsi only, like *H. Gyllenhalii*; the others, like the figure, with ferruginous legs: there were males and females of each, but no intermediate varieties. This, however, does not affect the question, because it is common to the *Carabidæ*, as may be seen in *Calathus cisteloides* and *Steropus madidus*, some of which have black, others red legs.

Helobia brevicollis Fab., *Carabus rugimarginatus* Mars., the other indigenous species is one of our commonest insects, secreting itself under stones and at the roots of trees: a good figure is given of it in *Sturm's Deut. Faun. v. 5. pl.* 67.

The pretty *Saxifraga aizoides* (Yellow Mountain Saxifrage) frequently added greatly to the beauty of the banks of the rivulets and springs where the insect was found.

161



HYLURGUS PINIPERDA.

ORDER Coleoptera. FAM. Bostricidæ *Lat., Leach.*

Type of the Genus Dermestes piniperda *Linn.*

HYLURGUS *Lat., Leach.* Hylesinus *Fab.* Bostrichus *Fab.* Scolytus *Oliv., Lat.* Ips *De G., Mars.* Dermestes *Linn.*

Antennæ short, clavate, pilose, inserted in a fissure on each side the head, before the eyes, 11-jointed, 1st joint very long, bent, clavate, 2nd globose, 3rd small, cup-shaped, 4 following transverse, the last being the broadest, to which is attached an ovate, globular, pubescent club, composed of 4 distinct joints (fig. 6).

Labrum minute, emarginate, ciliated (1).

Mandibles small, trigonate, acute, with 2 teeth on the internal edge (2).

Maxillæ horny, short, obtuse, armed internally with spinous bristles and pilose externally. *Palpi* very short, 3-jointed (3).

Mentum obovate, hairy. *Palpi* much longer than the maxillary, slightly pilose, robust, 3-jointed, 1st joint the largest, 3rd the smallest. *Lip* small, ciliated (4).

Head *globular, slightly produced anteriorly.* Eyes *small, elongated.* Thorax *cylindric-ovate.* Abdomen *cylindric.* Scutellum *indistinct.* Wings 2. Tibiæ *compressed, dilated towards their apex, uncinated internally, and bidentate on the external edge.* Tarsi *inserted close to the internal angle of the tibiæ, 5-jointed, 2 first joints short, 3rd bilobed, 4th very minute, 5th elongate-truncate.* Claws *simple* (5, *a fore leg*).

PINIPERDA *Linn. Syst. Nat.* 2. 562. 9. *Fab. Ent. Syst. v.* 1. *pars* 2. *p.* 367. *n.* 17. *Mars. Ent. Brit.* 57. 18.

Black, shining, slightly pubescent. Head and thorax rather minutely punctured, the former with a short ridge between the antennæ, the latter narrowed anteriorly. Elytra a little broader than the thorax, somewhat rugose with 9 minutely punctured striæ producing lines of hair, the interstices irregularly punctured. Antennæ and tarsi ferruginous.

Var. b. Elytra rufous.

d. B. testaceus *Fab. Ent. Syst. v.* 1. *pars* 2. *p.* 367. *n.* 18. Eyes blackish. Head and thorax dull and pale ferruginous. Elytra, antennæ and legs ochraceous.

In the Author's and other Cabinets.

WE have already given in folio 43 some account of an insect that is very destructive to the Elm, and the present paper relates to another beetle of the same family, no less injurious to the young pines (both *Pinus sylvestris* and *P. Strobus*) by destroying their leading shoots.

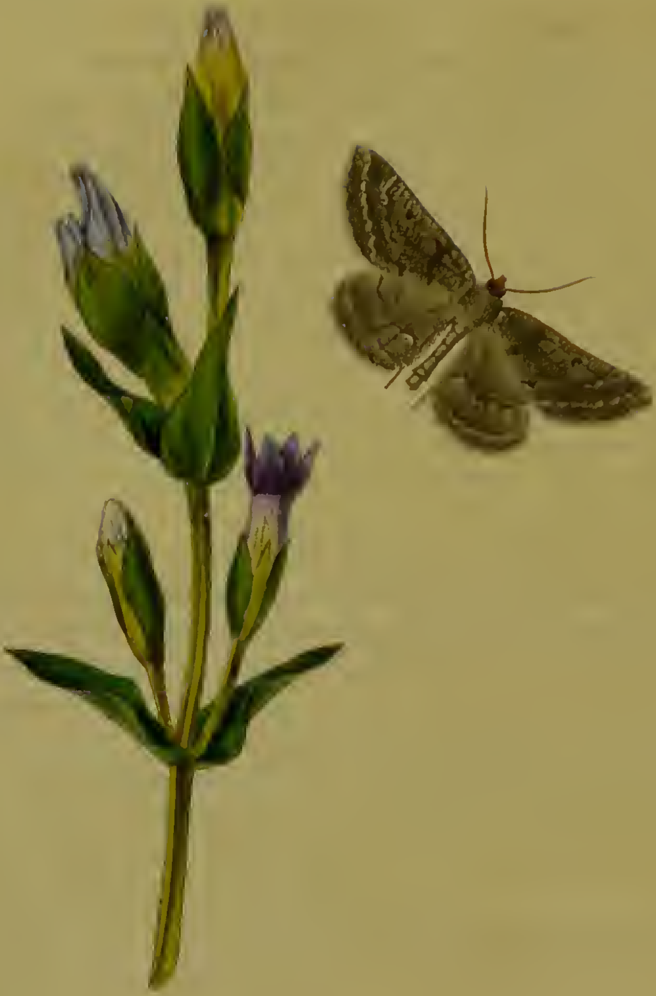
The following observations upon *Hylurgus piniperda* and the drawings illustrating its economy were communicated by my kind friend John Lindley, Esq.,[*] and I have only to regret that the limits of the work will not allow of their being given complete.

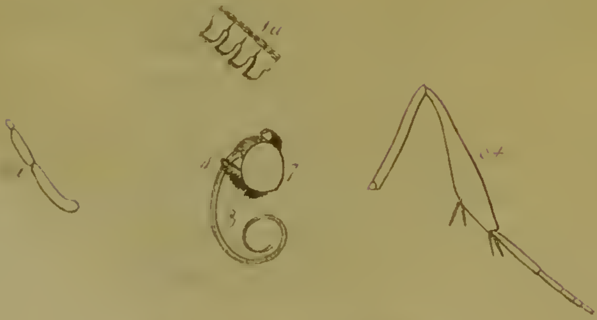
" For the purpose of observing its proceedings more narrowly, I placed a shoot of the Scotch Fir under a glass with the insect. In about three hours after, it had just begun to pierce the bark at the base of one of the leaves; its mandibles seemed chiefly employed, its legs being merely used as a means of fixing itself more firmly. Four hours after, its head and thorax were completely buried in the shoot, and it had thrown out a quantity of wood which it had reduced to a powder, and which nearly covered the bottom of the glass. In 16 hours more it was entirely concealed and was beginning to form its perpendicular excavation, and was busily employed in throwing back the wood as it proceeded in destroying it: there were evidently two kinds of this sawdust, part consisting of shapeless lumps, but the greater portion of very thin semi-transparent lamellæ or rather shavings, which under a strong lens exhibited the appearance shown at F. I now examined it every day till the 5th, when I found it had emerged through the central buds at about an inch from where it had first commenced.

" A, B, C, D, E, are longitudinal sections of the shoots of the Scotch Fir with the various perforations of the insects; a, where it commences; b, the aperture which it makes after it has finished its excavation; c, the end of the 1st and the beginning of its 2nd excavation."

There are 8 or 10 British species of this genus, most of which are found in June, July, and August, under the bark of trees; amongst which are

1. Hylurgus piniperda *Linn.—Mars. p.* 57. *n.* 18.
2. rufus *Mars.* 57. 19.
3. obscurus *Mars.* 57. 17.
4. piceus *Mars.* 58. 21.
5. angustatus *Gyll.*—ater *Mars.* 59. 25.
6. rhododactylus *Mars.* 58. 22.
7. ater *Fab.*—niger *Mars.* 59. 24.
8. Boleti *Mars.* 59. 27.




1
1
2
3
4

[illegible]

CHARISSA OPERARIA.

ORDER Lepidoptera. FAM. Phalænidæ *Lat.*, *Leach.*

Type of the Genus Geometra obscuraria *Hüb.*

CHARISSA *Nobis.* Phalæna *Linn.*, *Fab.*, *Lat.*, *Leach.* Geometra *Hüb.*, *Haw.*

Antennæ arising from the back part of the head, rather robust, long, attenuated at both ends, composed of numerous transverse joints, with a few short scales above, hairy beneath, compressed and produced internally in the males (fig. 1 a), slender and setaceous in the females.

Labrum and *Mandibles* minute, the latter ciliated internally.

Maxillæ long, ciliated towards their extremity (3).

Labial palpi not so long as the head, nearly straight, not projecting like a beak, nor contiguous, sparingly covered with scales (4), 3-jointed, 1st joint long, curved only at the base, 2nd shorter, 3rd minute ovate (4 a).

Head *small, covered with short close scales.* Wings *extended horizontally, undivided, superior trigonate, apex acute, margins indented, especially in the inferior wings.* Abdomen *long, slender and obtuse in the males, shorter and subconic in the females.* Anterior tibiæ *short, with an internal spine, 2nd pair with spurs at their apex, the posterior with 2 pair of spurs, sometimes subclavate in the males* (8†). Tarsi 5*-jointed, the basal joint in the anterior pair as long as the tibia.* Claws *simple, minute.*

Caterpillars *loopers with 6 pectoral, 2 abdominal, and 2 anal feet?*

OPERARIA *Hübner's Lep. pl.* 69. *f.* 359.

Dull gray, variegated and tinged with pale ochre, glossy. Antennæ dull ferruginous. Thorax and abdomen gray, speckled with whitish scales, the latter darkest at the edges of the segments. Wings rather narrow, superior dark gray irregularly variegated with white scales, an obscure transverse curved fascia towards the base, another beyond the middle, parallel to the posterior margin, sinuated, and a pale indented one near to the same margin; 7 minute black spots at the base of the cilia, and a large obscure one near the middle approaching the costa. Inferior wings like the superior in colour, with a sinuated obscure fascia near the centre, pale at the external edge, and a paler one nearer, parallel to the margin, upon which there are a few minute black spots and a larger very obscure one between the fascia and the base. Beneath pale silvery gray variegated; the fascia and central spots very obscure.

In the Cabinets of Mr. Dale and the Author.

The pectinations of the antennæ in the males, which give a robust and compressed appearance to them, will enable us to distinguish the individuals that compose this genus, which approaches very near to *Cleora*, and appears to be conterminous, and to unite the extensive groups designated as *Geometra* and *Phalæna* by Mr. Haworth and other authors. The shortness of the palpi (which are often nearly vertical, the ends only appearing from above) and the high point of insertion of the maxillæ are peculiar, as well as the clavate posterior legs of the males, which is, however, a partial character, not being very evident in *C. operaria*, although it is in the type.

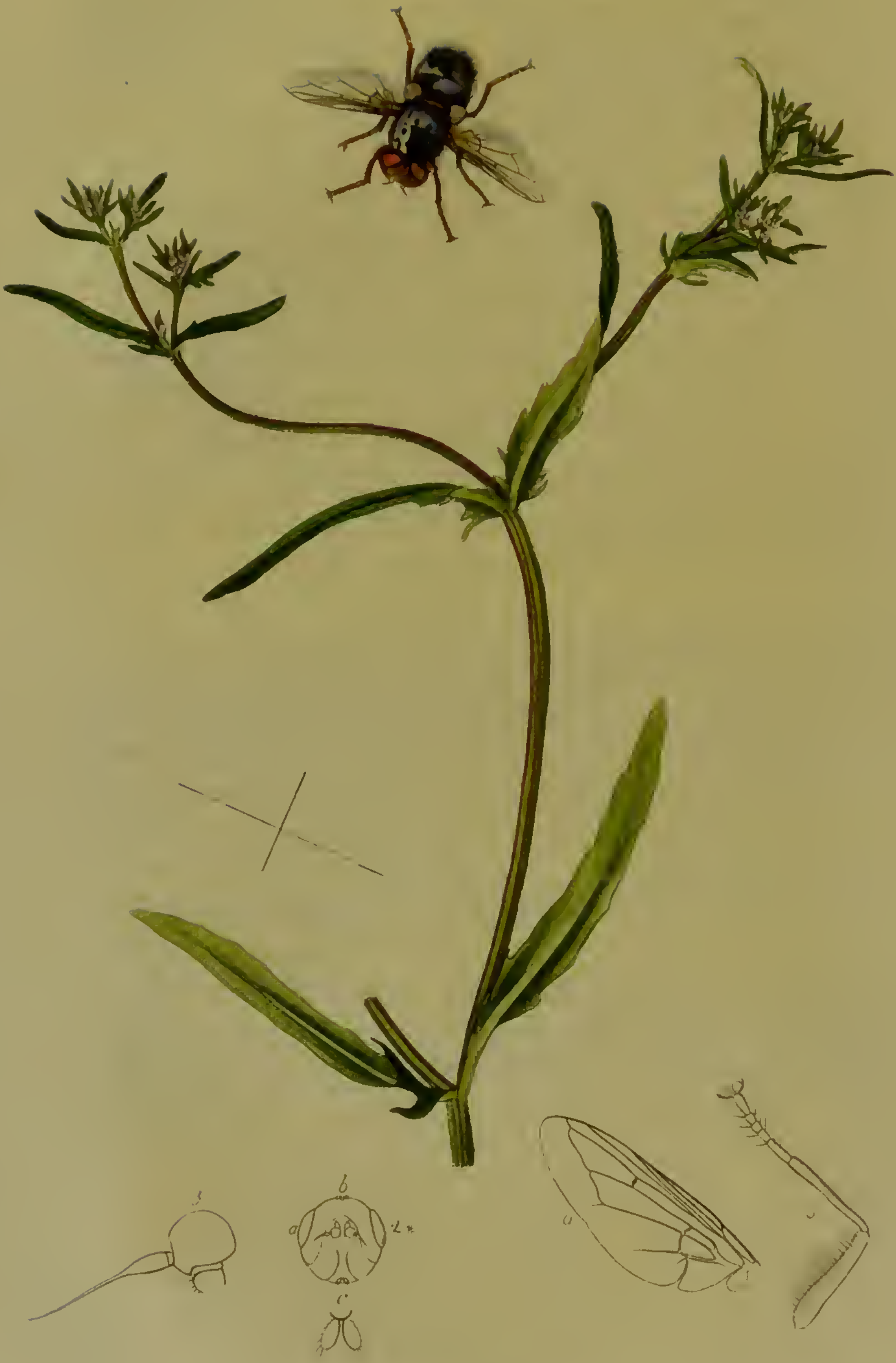
The British species that this genus comprises are,

1. Charissa operaria *Hüb.—Nob.*
2. serotinaria *Hüb.—Haw. Lep. Brit.* 311. 107.
3. pullaria *Hüb.—Haw. Lep. Brit.* 314. 115.—Phalæna quadripustulana *Don. Brit. Ins. v.* 13. *pl.* 463.
4. obscuraria *Hüb.—Haw. Lep. Brit.* 314. 116.

On the 26th July, whilst at the Isle of Bute, I took 2 males (one of which is figured) of *Charissa operaria:* Mr. Dale captured 2 others and a female soon after in the Isle of Arran. The species of this genus are generally attached to heathy situations: our insect secreted itself amongst the stones of the walls so peculiar to the North, and upon being disturbed took shelter amongst the fern during the day; and in the evening we never saw them.

The hills in Bute were covered with heath, upon which we found *C. operaria;* and about a mile from Rothsay, the plant figured, *Gentiana campestris* (Field Gentian), was in flower there at the time.

106



[illegible]

ŒSTRUS PICTUS.

ORDER Diptera. FAM. Œstridæ *Leach.* Muscides *Lat.*

Type of the Genus Œstrus Ovis *Linn.*

ŒSTRUS *Linn., Geoff., Fab., De Geer, Clark, Meig., Leach.*

Antennæ approximating, inserted in a cavity in the centre of the face, membranaceous, 5-jointed, basal joint nearly quadrate, 2nd transverse, 3rd somewhat globular and more coriaceous, 2 following forming an awl-shaped naked seta, the basal joint of which is very minute (fig. 3).

Labrum, Tongue, Mandibles and *Maxillæ* none.

Palpi? 2, minute, exarticulate, ovate, hairy, inserted below a small tubercle at the bottom of the head (2* c and c, detached and more magnified).

Lip none.

Mouth *none or concealed.* Head *vertical, short, and blunt* (2*, *a front view showing the situation of the antennæ.* Eyes *lateral, not very large, oval, more distant in the females than males* (*a*). Ocelli 3, *large, placed close together in a triangle upon the crown of the head* (*b*). Scutellum *distinct.* Abdomen *with its apex deflexed, acuminate in the females.* Wings *divaricating, punctured, containing about* 10 *cells, the costal nerve not surrounding the wing, two of the exterior cells united by transverse nerves before reaching the posterior margin* (9). Squamula *large concealing the* Halteres. Legs *rather slender, hairy.* Tibiæ *simple.* Tarsi 5*-jointed, basal and terminal joints the longest, the remainder short with a few bristles.* Claws *simple.* Pulvilli *large* (8, *a fore leg*).

Larvæ *smooth, fleshy, living in the frontal sinuses or under the skin of herbivorous animals.*

PICTUS *Megerle, Wiedemann, Meigen Syst. Besch. v.* 4. *p.* 172. *n.* 8.
Leachii *Samouelle's MSS.*

Cinereous, silvery, covered with black hairs. Face and antennæ pale ferruginous, hoary, upper part castaneous, changeable with gray; a triangular spot upon which the ocelli are placed and behind the eyes black tessellated with gray. Eyes ferruginous. Thorax gray, shoulders and region of the wings ferruginous, a quadrate spot narrowed before in the middle of the anterior portion blackish, upon which are 2 intense black lines, with 2 black spots on each side, behind are 2 other black spots and a slender line on each side. Scutellum castaneous, silvery at the margin with 2 obscure black spots. Abdomen silvery gray variegated with black. Wings transparent, yellowish towards their base with obscure spots, the little transverse nerve near the centre forming a spot; nerves brown. Squamulæ fuscous. Legs ferruginous, thighs variegated with black and gray beneath.

In the Cabinet of Mr. Samouelle.

There is no genus of insects whose habits are more formidable, or whose economy is more extraordinary, than the *Œstridæ.*

It has been on a former occasion remarked, that our *Œstri* were unknown to the ancients, and that the "flying plague" mentioned by Virgil was a *Tabanus* (Plate 78), an insect as remarkable for the perfect organization of its *instrumenta cibaria*, as *Œstrus* is for the absence of those organs.

Although the seeds of inquiry were first sown by Malpighi, Vallisneri, Reaumur, and De Geer, Linnæus and cotemporary writers were but imperfectly acquainted with this family; and it was to the ingenious and masterly investigations of our own countryman Mr. Bracy Clark that we are put in complete possession of the habits and economy of the different species, and enabled to examine them scientifically. The European *Œstridæ* have been separated by Dr. Leach into 2 genera, in which he has been followed by the most learned Dipterist of the day. The genus *Œstrus* is distinguished from *Gasterophilus* by the economy of its larvæ and the nerves of the wings, and comprises 4 British insects.

1. Œstrus Ovis *Linn.—Clark's Essay, tab.* 2. *f.* 16. *to* 20. —*Don. Brit. Ins. v.* 16. *pl.* 550.
2. Bovis *Linn.—Clark, tab.* 2. *f.* 1. *to* 10.
3. Ericetorum *Leach.*
4. pictus *Meig.—Nob.*

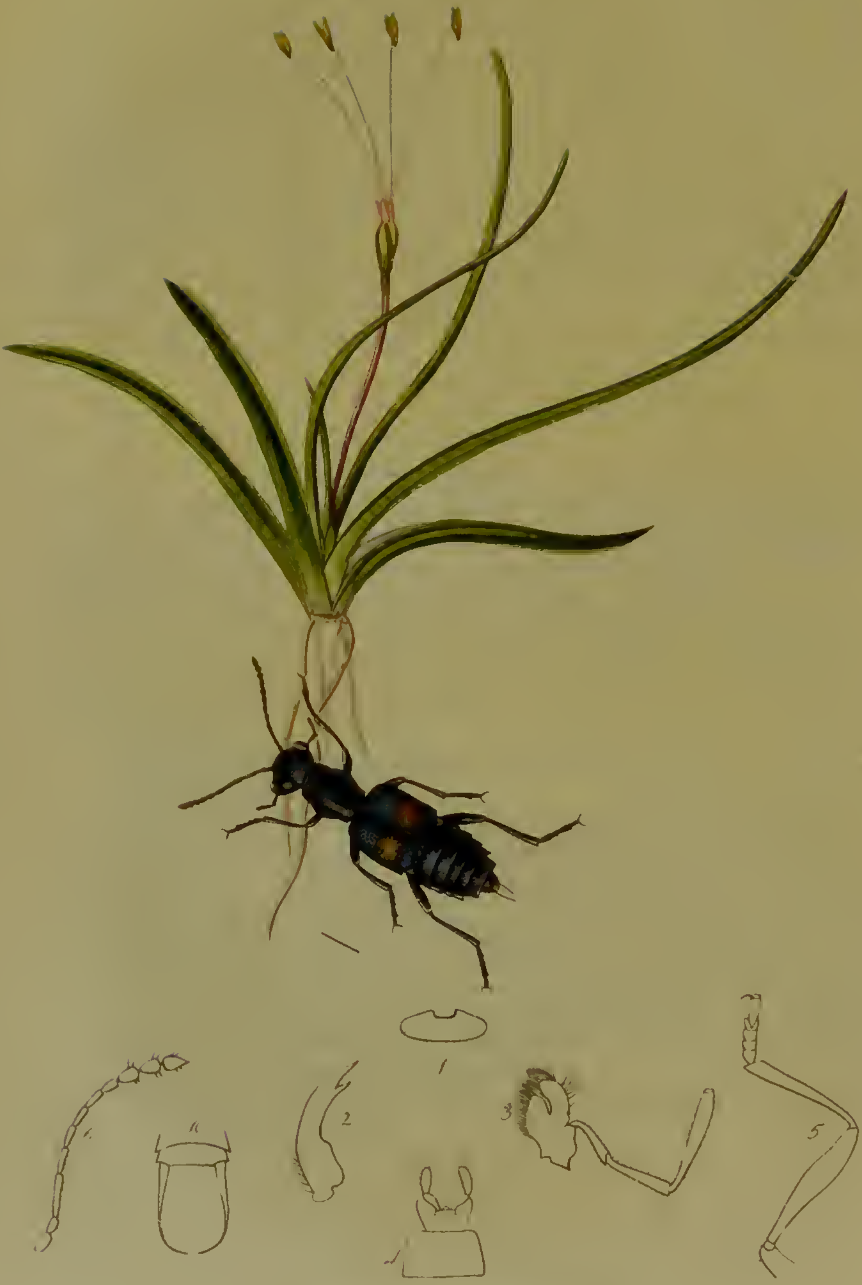
The larvæ of *Œ. Ovis* live in the frontal cavities of the sheep, change to chrysalides about June, and in August the male flies are found not unfrequently sticking to pales and walls in the neighbourhood of sheep pastures.

The larvæ of *Œ. Bovis,* called Warbles, Wornals, &c., live under the hides of oxen and cows, change to chrysalides about the end of June or later, and the fly appears the middle of August.

Œ. Ericetorum is considered as a variety only of *Œ. Bovis* upon the Continent.

We cannot but congratulate our readers on being able to present them with another species of this singular family, especially as it is a fine and handsome insect of great rarity and has never before been figured: as a British insect it is unique, a single specimen having been taken by Mr. Samouelle in the New Forest at Burley Heath, 12th of June, 1823. Of its habits we know nothing; but it is not improbable that it is attached to the deer, and lives in the larva state probably in the frontal cavities of the head of that animal.

The plant is *Valeriana dentata* (Oval-fruited Corn Salad).


1
2
3
4
5

DIANOUS CŒRULESCENS.

ORDER Coleoptera. FAM. Staphylinidæ *Lat., Leach.*

Type of the Genus Stenus cœrulescens *Gyll.*

DIANOUS *Leach, Samouelle.* Stenus *Lat., Fab., Grav., Gyll.* Staphylinus *Linn., Fab.*

Antennæ inserted behind the clypeus, between the eyes, subclavate, 11-jointed, pilose at the base and pubescent towards the apex, basal joint thick ovate, 2nd smaller ovate, 3rd long, nearly linear, the 5 following decreasing in length and increasing in thickness, 9th and 10th turbinate, last conic (f. 6).

Labrum transverse, sub-oval, slightly pilose (1).

Mandibles long, transverse, curved, acute, dilated towards the base, with a single tooth on the internal edge near the apex (2).

Maxillæ small, terminated by 2 ciliated lobes, of which the superior one is the longer and more rigid. *Palpi* very long, pilose, 4-jointed, basal joint long clavate, 2nd longer clavate, 3rd nearly as long as the preceding united, terminated by a transparent papillose membrane rather than a 4th joint (3).

Mentum quadrate. *Palpi* short, 2-jointed, the 3rd being obsolete, 2nd oval, pilose. *Lip* not longer than broad, cordate, bilobed (4).

Head *large, subtrigonate.* Eyes *ovate, not very large but prominent.* Neck *distinct.* Thorax *elongate, cylindric-ovate, truncated, narrower than the head.* Scutellum *very minute.* Coleoptra *quadrangular, considerably broader than the head, emarginate at the posterior angles.* Wings 2. Abdomen *convex, terminated by* 2 *naked setæ, more distant and incurved in the males* (10). Legs *rather long and slender.* Tibiæ *simple.* Tarsi 5*-jointed, anterior somewhat dilated in the male,* 4*th joint slightly bilobed.* Claws *simple* (5, *fore leg of male*).

CŒRULESCENS *Gyll. Ins. Suec. t.* I. *pars* 2. *p.* 463. *n.* 1.—rugulosus *Leach's MSS.*

Cyaneous, punctured, pubescent. Head cyaneous, irregularly punctured, with 2 longitudinal impressions extending from the base of the antennæ nearly to the neck. Eyes black. Thorax cyaneous, coarsely punctured. Elytra covering half the abdomen, coarsely punctured, anterior angles rounded, cyaneous, with a pure ochraceous spot behind the middle. Abdomen cyaneous, inclining to purple, not so deeply punctured as the head, apex in the female ferruginous. Antennæ blackish, 3 terminal joints ferruginous. Palpi and legs blackish with gray pubescence. Tarsi fuscous.

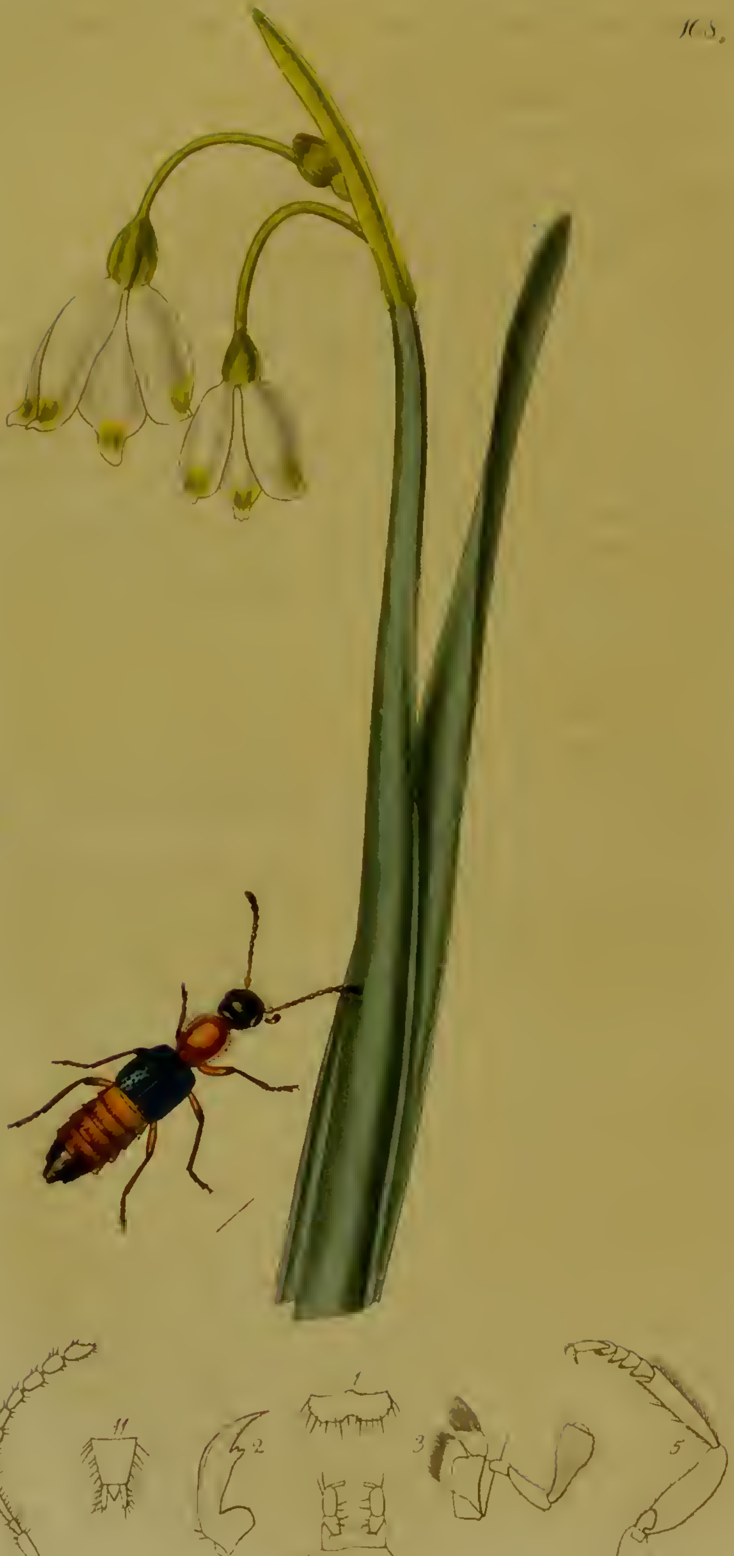
In the Cabinets of Mr. Stephens and the Author.

The genus *Dianous* was first recorded by Mr. Samouelle in his Useful Compendium; and upon comparing its characters with those of *Stenus*, the following differences will be very evident. The antennæ and 3rd joint of the palpi are less clavate, the lip (or tongue, as it is sometimes called) is not elongated, nor of the same form as in *Stenus:* the setæ of the abdomen are very much longer, the eyes are smaller and more distant, and the mandibles are not serrated on the internal edge as in the genus last named.

Whether our insect is the *Staphylinus biguttatus* of Linnæus is very doubtful from his vague description, which will apply to several species; it is, however, undoubtedly the *Stenus cœrulescens* of Gyllenhal, which having been published many years, his specific name has been restored. In the native land of that acute and learned Naturalist, this little insect is every where to be found frequenting the shady banks of rivulets. In this country it is very local, and was first discovered by Dr. Leach, who met with it (Mr. Stephens informs me) at Spitchwick and Woodland near Plymouth, and upon the banks of the river near Roslyn Castle, Scotland.

Littorella lacustris (Plaintain Shore-weed), a male plant of which is figured, covers the shores of many of the lakes in Scotland. We gathered it near Tarbet on the banks of Lochlomond, and at Loch Katrine.

168.



[illegible] by J. Curtis London [illegible]

PÆDERUS FUSCIPES.

ORDER Coleoptera. FAM. Staphylinidæ *Lat.*, *Leach.*

Type of the Genus Staphylinus riparius *Linn.*

PÆDERUS *Fab.*, *Oliv.*, *Payk.*, *Grav.*, *Gyl.*, *Leach.* Staphylinus *Linn.*, *Fab.*, *De Geer*, *Marsh.*

Antennæ inserted before the eyes, at the base of the mandibles, sub-clavate, pubescent and pilose, 11-jointed, 1st joint rather robust, 2nd short, 3rd as long as the first but more slender, the remainder shorter, insensibly thickening towards the extremity, the 4 last joints being pedicled and the terminal one conic and obliquely truncated (f. 6).

Labrum transverse, exserted, pilose, narrowed before, and deeply emarginate (1).

Mandibles transverse when at rest, large, curved, acute, dilated in the middle and at the base, with a bifid tooth on the internal edge (2).

Maxillæ with 2 membranaceous lobes, internal one rather large, ciliated, external terminated by a dense and long ciliation. *Palpi* long, 4-jointed, 1st joint small, 2nd long clavate, 3rd very large and hairy, clavate, truncate, 4th short, nearly concealed (3).

Mentum transverse, broadest at the base. *Palpi* 3-jointed, basal joint short clavate, 2nd robust, sub-ovate, 3rd slender, linear truncate. *Lip* broad, emarginate (4).

Head *large, sub-ovate.* Eyes *small.* Neck *distinct.* Thorax *obovate.* Scutellum *minute.* Wings 2. Elytra *quadrate, not covering half the abdomen, which is convex, the penultimate joint being much longer than the others; terminated by* 2 *styles in the female* (11). Tibiæ *simple.* Tarsi 5*-jointed, anterior dilated in the males, 4th joint bi-lobed.* Claws *simple* (5, *a fore leg*).

FUSCIPES *Nobis.*

Shining, pilose. Head smooth, black. Antennæ black, ochraceous at their base. Mandibles and palpi ochraceous, the latter black at the apex. Neck and thorax rufous, with a few punctures from which arise strong hairs. Scutellum obscure. Elytra dark green, coarsely punctured, somewhat pubescent. Abdomen rufous, the 2 terminal joints black, sparingly punctured towards the extremity. Coxæ and thighs ochraceous, the latter black at their apex. Tibiæ brown, darkest at the base. Tarsi piceous.

In the Cabinets of Mr. Chant, Mr. Bentley, and the Author.

PÆDERUS is distinguished from the species that form the group named by Dr. Leach *Rugilus* (containing *P. orbicu-*

latus Payk. &c.) by the bilobed penultimate joint of the tarsi, the more robust neck and obtuse apex of the thorax, the styliform processes to the abdomen of the female, and other less conspicuous differences, which will be explained when we figure that genus.

The pretty group under consideration consists of 5 British species, remarkable for the gaiety and contrast of their colours, all of them partaking more or less of an orange-colour.

1. Pæderus riparius *Linn.—Don. Brit. Ins. v.* 5. *pl.* 167.
2. littoralis *Grav.*
3. fuscipes *Nobis.*
4. ruficollis *Fab. Panz. fasc.* 27. *pl.* 22.
5. sanguinicollis (*Dahl ?*) *Steph.*

The first of these species appears to be found every where during April and May, upon banks, under stones, and amongst grass.

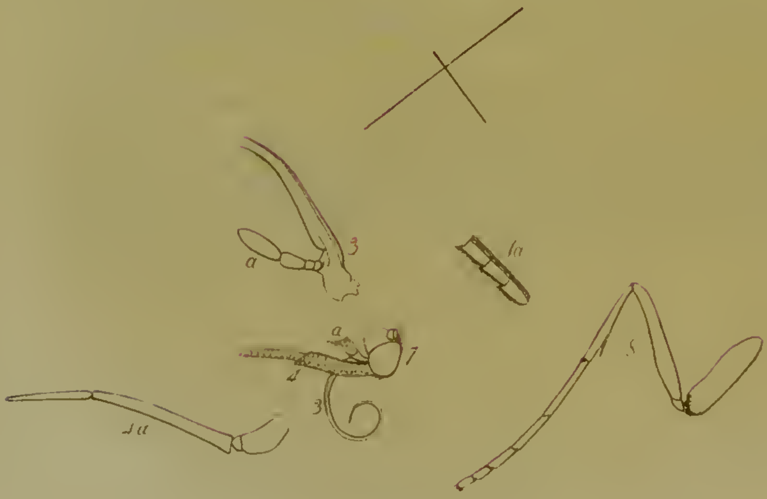
The second, which is very similar to the former, but has a less globose thorax, and red instead of black mandibles, is not so frequent. It has been found in Norfolk and Devonshire.

The third (a male of which is figured) is much smaller than the two former, very similar to them in colour; but is characterized by fuscous legs and feet (from whence its name). It was discovered in the month of September amongst the lichen which clothes the old white thorn bushes in the New Forest near Brockenhurst, by Mr. Chant and Mr. Bentley, to whom I am obliged for specimens.

The fourth is in Mr. Stephens's cabinet. The thorax alone is rufous.

The fifth species is in the British Museum.

Specimens of the fine and rare plant delineated, *Leucojum æstivum* (Summer Snow-Flake), were gathered last April by Mr. Dale, near Wimborne, Dorsetshire, and communicated to the author.


3
a
1a
a
7
4
3
2a
5

109.

CRAMBUS RADIELLUS.

The Rayed Veneer.

Order Lepidoptera. Fam. Pyralidæ *Leach.* Crambites *Lat.*

Type of the Genus Phalæna Pascuella *Linn.*

Crambus *Fab., Lat., Leach.* Palparia *Haw.* Phalæna (Tinea) *Linn., Fab.* Tinea *Hüb.*

Antennæ alike in both sexes, inserted between the eyes near the back of the head, setaceous, composed of numerous elongated joints, covered with scales above, ciliated beneath; basal joint robust (f. 1 *a*, a few joints magnified).

Maxillæ long, slender, hairy towards the base (3, 3). *Palpi* exserted, tufted with scales (7 *a*); 4-jointed? 2 first joints minute, 3rd longer obovate, 4th equal in length to the others, elongate-ovate (3 *a*).

Labial palpi porrected like a beak, very long and slender, covered with short scales (4), 3-jointed, basal joint short robust, 2nd very long attenuated, 3rd long attenuated (4 a).

Head *covered with short close scales, rather gibbose before.* Wings *convoluted when at rest: superior narrow, truncated a little obliquely at the extremity; inferior ample.* Legs *rather long, anterior pair with the tibia much shorter than the thigh, with a small internal spine.* Tarsi 5*-jointed, basal joint as long as the tibiæ in the anterior pair* (8, *a fore leg*). Tibiæ *of the 2nd pair with spurs at the apex; of posterior with spurs also above the apex.* Claws *slender, minute.* Pulvilli *small.*

Caterpillars *with* 6 *pectoral,* 8 *abdominal, and* 2 *anal feet?*

Obs. *The dissections are taken from* Tinea paleella *Hüb.*

Radiellus *Nobis.*—radiella *Hüb., Schmet.*

Glossy, dull ferruginous ochre. Antennæ gray. Maxillary palpi internally whitish. Labial palpi fuscous at the apex. Thorax ferruginous, whitish at the base of the superior wings. Abdomen cinereous, inclining to violet at the base. Superior wings darkest towards the base with a silvery white line in the centre, dilated towards the apex, extending nearly to the posterior margin, where it is truncated obliquely; radiated more or less on the internal edge, in some only angulated. Inferior wings very pale yellow, speckled with brown, rosy at the base and internal margin; cilia whitish, tinged with ochre at the base, in the superior wings. Legs gray. Tarsi fuscous. Beneath pale yellowish gray. Abdomen fuscous. Superior wings with 2 fuscous broad rays from the base, not touching the costa.

In the Cabinets of Mr. Dale and the Author.

This genus belongs to a family distinguished by having 2 distinct pair of palpi, and which we have not before touched upon. *Crambus* is separated from *Chilo* (which it follows) by its less lanceolate wings and shorter legs, and from *Phycis* by its simple antennæ and porrected palpi. With the economy of this fine genus we are unacquainted; the perfect insects fly in the evening, and are remarkable for settling with their heads downward, an attitude that probably assists them in expanding their ample wings, which are so curiously convoluted round them, giving a cylindrical appearance to the insect. Many individuals of this genus are amongst our commonest Lepidoptera; and when walking under our brightest summer sun, through grass or fern, at every step our attention is diverted by the flight of this pretty race.

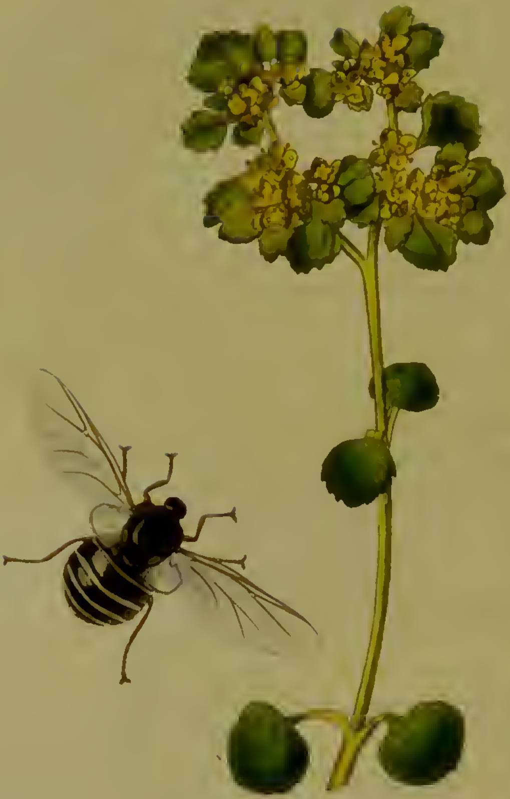
Mr. Haworth has described most of the species of our genus (about 30 in number) in his *Lepidoptera Britannica*, under the name of *Palparia.* I shall therefore only enumerate the following rare species, which have been considered as belonging to this group: but I must not omit to remark, that, excepting the 2 first, it is not from my own observations.

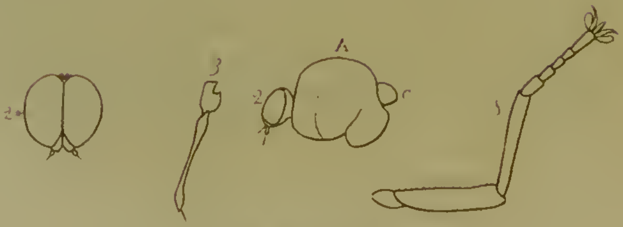
1. Crambus margaritaceus *Fab.*—Taken by Mr. Dale and myself, July 1825, in Perthshire.
2. latistrius *Haw.*—Taken in August by Mr. Dale in Dorsetshire and Hampshire.
3. chrysonuchella *Hüb.*
4. barbus *Haw.*
5. auriferus *Hüb.*—*Haw.*
6. aridellus *Hüb.*—Taken at Darent, Kent, by Mr. Stone.
7. tetrix *Haw.*
8. tentaculeus *Hüb.*—*Haw.*—Taken at Coombe, Surrey.

The species figured, which I believe to be a variety only of *T. radiella* Hüb. (Mr. Dale's other specimens having radiations), may be readily distinguished from *C. margaritaceus* (to which it is nearly allied), by its shorter palpi, the head not being white, the thorax entirely ferruginous, the stripe on the wings being narrower, more or less rayed, the inferior wings very much paler, clouded with ochre; and the cilia of the superior wings is white, and the underside very much darker.

Mr. Dale was so fortunate as to capture 2 specimens of *C. radiellus* on the summit of Ben Lawers, and 2 others near the top of Craig-challoch near Killin, the middle of July. The pretty *Silene acaulis* (Moss Catchfly or Campion), which grew in large masses there, was in flower at the time.

110





HENOPS MARGINATUS.

Order Diptera. Fam. Acroceridæ *Leach.* Inflata *Lat.*

Type of the Genus Musca gibbosa *Linn.*

Henops *Ill., Meig., Fab.* Ogcodes *Lat., Leach.* Syrphus *Fab., Panz.* Musca *Linn.*

Antennæ nutant, remote, inserted at the bottom of the head just above the mouth, 3-jointed, the basal joint large, subglobose, 2nd long, dilated at the base and apex, that being rigid, and this having a short seta near the extremity (f. 3).

Cavity of the mouth large.

Trophi imperfect or none.

Head *very small, globose, much lower than the top of the thorax* (2). Eyes *contiguous, covering the greater portion of the head* (2*). Ocelli 3, *placed behind the eyes on the crown of the head* (2*). Thorax *large, globular* (A). Scutellum *rounded, distinct* (c). Abdomen *very large, globose, inflated, apex deflexed.* Wings *longer than the abdomen, nervures very obscure, forming a costal, subcostal and discoidal cell, apical cells imperfect.* Squamulæ *large, rounded, covering the* Halteres, *which are clavate.* Tibiæ *simple.* Tarsi 5*-jointed, basal and terminal joints the most robust and the longest.* Claws *large, simple.* Pulvilli *distinct, trilobed* (8, *a fore leg*).

Obs. The dissections are taken from the species figured.

Marginatus *Meig. Syst. Besch. v.* 3. *p.* 100. *n.* 2.—gibbosus *Meig. Klassif.* 1. 151. 1.

Black, shining, pubescent. Head black, naked. Thorax having yellowish pubescence, minutely punctured. Scutellum more coarsely punctured. Abdomen minutely punctured, piceous, the margins of the segments dirty white, forming 5 transverse bands; beneath whitish. Wings slightly iridescent; the nervures, especially the costal, yellowish. Halteres ochraceous. Legs dull ferruginous, fuscous towards their base and apex.

Obs. Specimens are sometimes much less than the size represented by the crossed lines in the plate.

In the Author's and other Cabinets.

Within the large cavity of the mouth may be seen a membranous flat substance surrounded by an interrupted coriaceous circle, with an appendage arising near the middle: this may probably answer to the lip in other Diptera, but without living specimens it appears to be impossible to arrive at the truth;

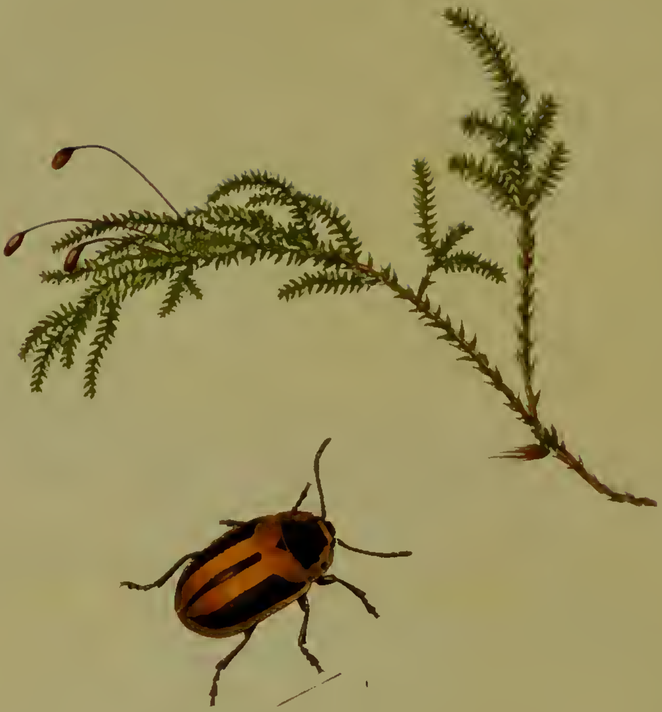
and the want of such an opportunity has prevented me from investigating the trophi of this genus so well as I could wish, which I the more regret, because Fabricius, who has given an account of those organs, appears not to have been satisfied; and I confess that in my specimen, which appeared to be quite perfect, I was not able to detect the parts that he has described. Meigen, for reasons similar to my own, has not given figures of the mouth. The different opinions respecting its affinities render a knowledge of the trophi very desirable, and absolutely necessary to decide this point. Latreille and Leach placed the family to which *Henops* belongs between the *Bombylidæ* and *Syrphidæ*; Meigen, between his *Tachydromiæ* and *Stratiomydæ*. I feel persuaded that Latreille's locality is the more natural, for even Meigen includes the genus *Cyrtus* with his *Inflatæ*; and the structure of the proboscis of that genus, no less than the nervures of the wings, render it impossible, we conceive, to remove it from the *Bombylidæ*; whilst the structure of the antennæ and the inflated abdomen show that there is nothing but the wings in *Henops* analogous to the habit of the *Stratiomydæ*.

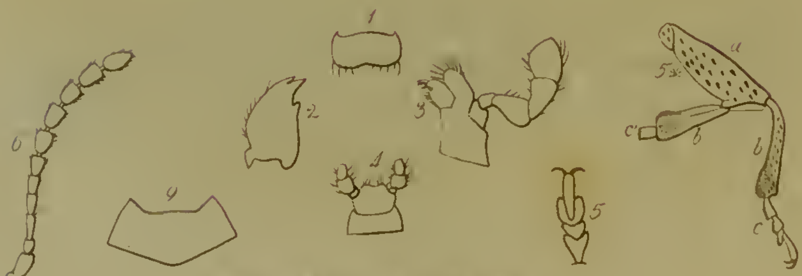
Our genus is distinguished from *Acrocera*, to which it is closely allied, by its subclavate antennæ, which are inserted below the union of the eyes, by its almost nerveless wings and large squamulæ.

The only 2 species in British cabinets are,

1. Henops gibbosus *Linn.—Meig. Syst. Besch. tab.* 24. *f.* 15. —Taken in May and June on Wimbledon Common, and in Coombe Wood.
2. Henops marginatus *Meig.*, which has several times occurred in the New Forest. My specimens I purchased of Mr. Joseph Standish, who beat them out of old white thorn bushes that were covered with lichen, the end of June and beginning of July. They were so sluggish in the net that they laid with their wings closed, which made it difficult to detect them; and the least pressure destroyed the rotundity of their bodies, which are very thin, and with the large wings and scales appear to be well adapted to enable the insect to float like a balloon in the air, subject to the influence of any current that may prevail.

The plant is *Chrysosplenium oppositifolium* (Opposite-leaved Sengreen).





Pub by J. Curtis. London [illegible]

111.

CHRYSOMELA ADONIDIS.

Order Coleoptera. Fam. Chrysomelidæ *Lat.*, *Leach.*

Type of the Genus Chrysomela Hæmoptera *Linn.*

Chrysomela *Linn.*, *Fab.*, *Lat.*, *&c.*

Antennæ inserted close to the anterior margin of the eyes, subclavate, hairy and pubescent towards the apex, 11-jointed; 1st joint robust, 2nd subglobose, 3rd subclavate, longer than the 4th, 5th, and 6th, which are more robust, the remainder of equal size, turbinate, pedicled, the terminal one conical (6).

Labrum transverse, slightly emarginate and hairy, angles rounded (1).

Mandibles small concave, subtrigonate acute, bifid at the apex, one having a tooth on the internal edge (2).

Maxillæ bilobed, ciliated with strong bristles, the internal lobe with 3 moveable claws at the apex. *Palpi* very robust, pilose, 4-jointed, 1st joint small, 2nd and 3rd of equal size, clavate-truncate, 4th subglobose truncate (3).

Mentum transverse. *Labium* pentagonal, slightly emarginate and pilose in front. *Palpi* short, robust, pilose, 3-jointed, basal joint transverse, 2nd large subglobose, 3rd ovate truncate (4).

Head *rather small, nutant.* Eyes *small.* Thorax *transverse, narrowed and emarginate before, posterior margin angulated.* Sternum *not produced* (9). Scutellum *distinct.* Body *hemispheric.* Wings 2. Legs *rather short.* Tibiæ *simple.* Tarsi 4-*jointed, first* 3 *joints spongy beneath, basal and 2nd joints cordate, the latter being short, 3rd broad bilobed, 4th long subclavate.* Claws *simple* (5* *a lusus naturæ; a, the femur; bb′, tibiæ; c, the tarsus; c′, basal joint of tarsus*).

Adonidis *Fab. Ent. Syst. v.* 1. *pars* 1. *p.* 312. *n.* 23.

Oval, ochraceous. Mouth, clypeus, eyes, antennæ, legs and underside black. Thorax minutely punctured, sides not incrassated; a large space down the centre dilated behind and a small spot on each side near the margin black. Scutellum smooth, shining black. Elytra margined somewhat irregularly punctured, a stripe down the suture, interrupted at the base, and a broad one parallel to and near the margin of each elytron piceous black.

In the Cabinet of the British Museum.

CHRYSOMELA is one of our most extensive genera, containing upwards of 40 British species, some of which are extremely beautiful, and many of them much esteemed for their rarity, amongst which the following may be enumerated:

I. Thorax with the sides simple.

Chrysomela Adonidis *Fab.*, *Nob.*
geminata *Payk.*: quinquejugis *Marsh.*
fulgida *Fab. Syst. Eleut.*
fastuosa *Linn.*, *Don.* 6. 194.
Viminalis *Linn.*, *Panz.* 78. 3: 10-punctata *Marsh.*
rufipes *Payk.*: 10-notata *Marsh.*, *Don.* 11. 373. 1. 1.

II. Thorax with the sides incrassated.

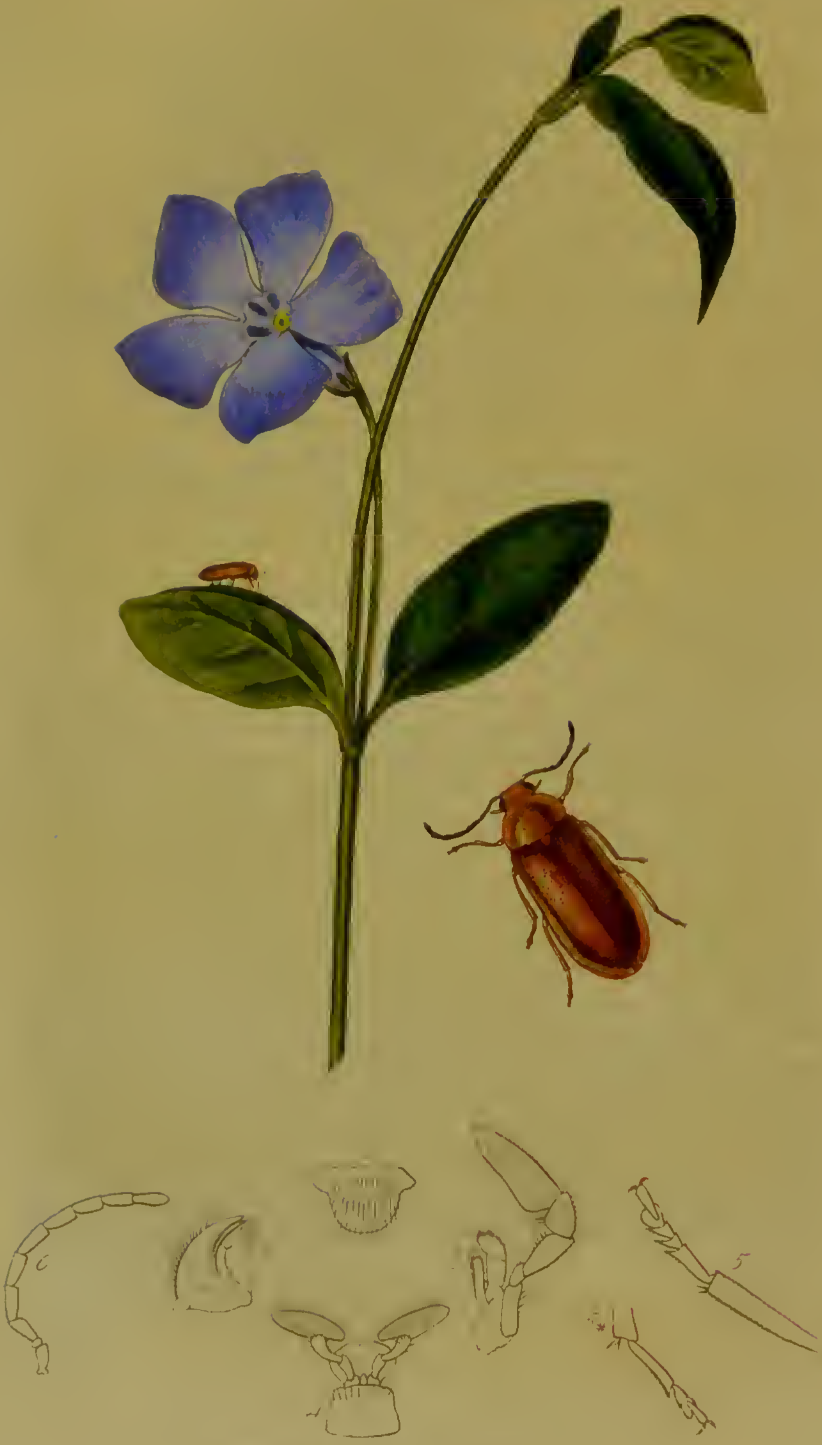
Chrysomela incrassata *Marsh.*: Lamina *Fab.*, *Panz.* 44. 5.
lepida *Brit. Mus.*
limbata *Fab.*, *Panz.* 16. 8.
marginata *Linn.*, *Panz.* 16. 11.
lurida *Linn.*, *Panz.* 78. 1.

Mr. Samouelle informs me, that the rare species figured was presented with some others to the British Museum by Dr. Leach, who received it from a gentleman in Lincolnshire, by whom it was taken.

The extraordinary monstrosity figured in the plate (5*) has been introduced in consequence of its having been alluded to in the valuable volumes of the *Introduction to Entomology* lately published, where it is stated to be one of the most remarkable instances of the kind that has fallen under the observation of the authors. The specimen of *C. hæmoptera* L. exhibiting this singular conformation, I took amongst a multitude of others many years since upon the *Senecio Jacobæa;* and from the symmetry of the insect not being affected, its peculiarity of structure did not attract my attention until after it was dead. The apex of the femur of one of the hinder legs is lengthened obliquely, to the internal extremity of which the supernumerary tibia is attached; it appears to have been moveable: the basal joint of the tarsus is remaining, and from its having a cavity for the reception of the following joint, there is no doubt but the remainder have been broken off by some accident. It is not our intention to enlarge further upon the subject; we only hope that a fact so curious (and rendered more remarkable from insects being unlike other animals in their organization, and undergoing 4 distinct transformations,) will be interesting if not valuable to the physiologist and comparative anatomist.

Hypnum alopecurum (Fox-tail Feather-moss) is figured in the plate.

112



[illegible]

112.

ZONITIS TESTACEA.

Order Coleoptera. Fam. Cantharidæ *Lat., Leach.*

Type of the Genus Zonitis præusta *Fab.*

Zonitis *Fab., Lat., Panz.* Melyris *Oliv.* Dasytes *Schön.*

Antennæ inserted close to the anterior margin of the eyes, rather long, pubescent, more compressed in the males than females; 10-jointed, basal joint small, 2nd very minute, 3rd clavate-truncate, 4th and following of the same form, but longer, terminal joint elongate ovate (6).

Labrum very pilose, semicircular, produced at the posterior angles (1).

Mandibles small, corneous, at the apex, which is bifid, coriaceous at the base which is dilated, with a large membranous lobe on the internal edge, pubescent at the apex, external margin pilose (2).

Maxillæ small, coriaceous, bilobed, internal lobe linear, very hairy towards the apex, external membranous and hairy at the apex. *Palpi* long and robust, pilose, 4-jointed, basal joint small, 2nd large subclavate, 3rd trigonate, 4th very large, elongate-conic, pubescent (3).

Mentum pilose, quadrate, slightly dilated at the base. *Palpi* large, hatchet-shaped, arising from 2 scapes with a small hairy process between them, 3-jointed, 1st joint short, 2nd longer, incurved, clavate, 3rd large hairy, attached obliquely, having the lower internal angle produced. *Lip* large membranous, pubescent rounded, notched in the middle (4).

Head *inflexed.* Eyes *vertical, not touching the thorax, kidney-shaped.* Thorax *transverse, rounded very short beneath to receive the head,* Scutellum *distinct.* Coleoptra *long, oval.* Wings *long.* Tibiæ *simple long slender, with 2 spines at their apex.* Tarsi *of 4 anterior legs 5-jointed, basal joint the longest, 2nd and 3rd short obtrigonate, 4th bilobed* (5): *posterior 4-jointed, basal joint very long, 2nd obtrigonate, 3rd bilobed* (5*). Claws *bidentate.*

Testacea *Oliv. Entom. v.* 2. *n.* 21. *plate* 3. *fig.* 15. *a, b.*

Ochraceous, minutely punctured, villose, shining. Head inclining to rufous. Eyes and apex of mandibles black. Antennæ black, excepting the 3 basal joints which are ochraceous.

In the Author's and other Cabinets.

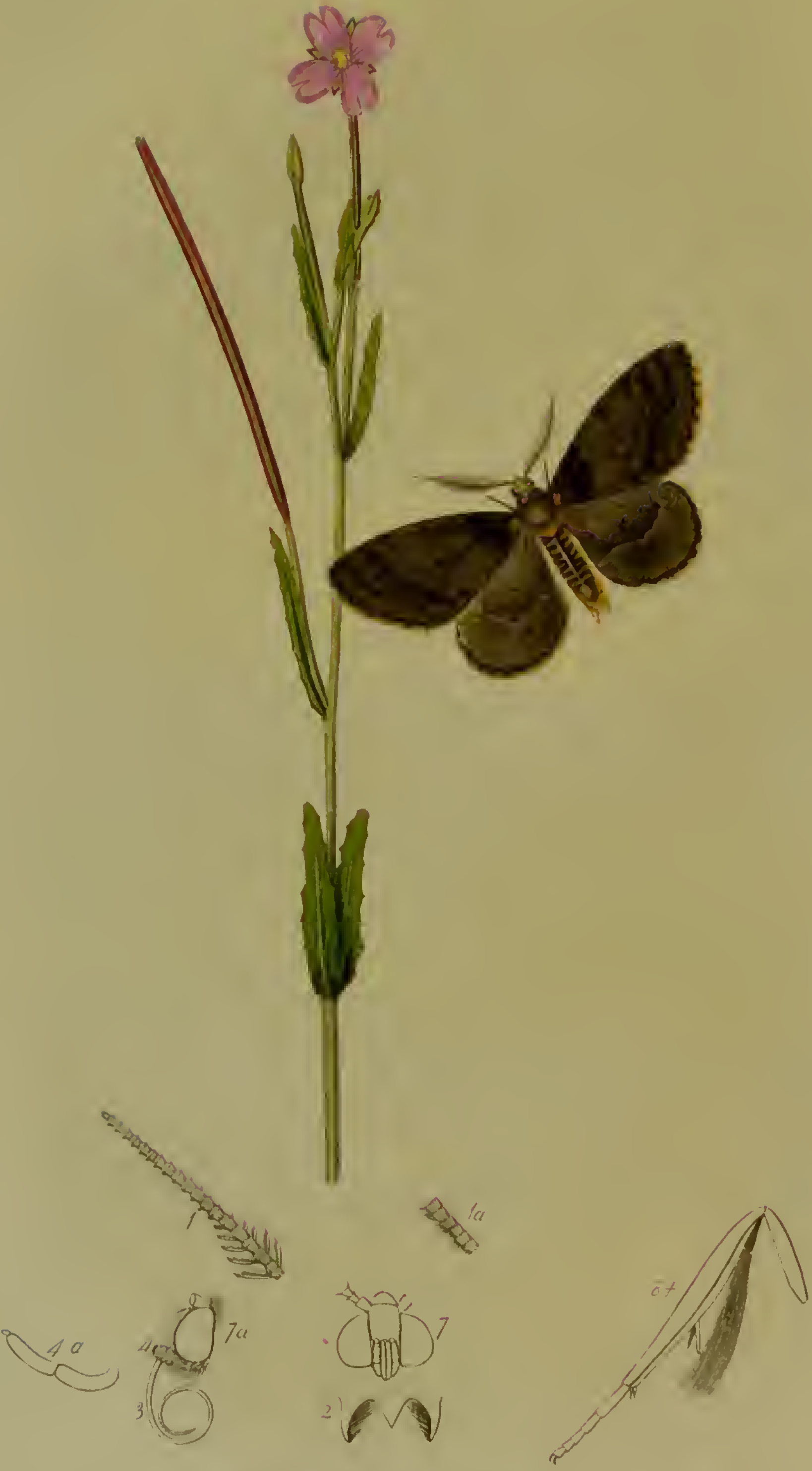
The opinion that has hitherto prevailed in this country, that our insect belonged to Zeigler's genus *Nothus*, cannot be maintained, since the incrassated posterior thighs of one sex and the arcuated of the other, are characters that are wanting in the species under investigation. We have placed it with *Zonitis*, as it agrees tolerably well with Latreille's definition in his *Considérations Générales*, page 215, where he has given *Z. præusta* Fab. as his type, and separated those species with lengthened maxillæ, which he there calls *Nemognatha*. When the oral organs of the whole genus have been carefully examined, it will probably be found expedient to form 2 divisions. The antennæ of our species are composed of 10 joints only, I believe, in both sexes; the remarkable form of the labial palpi appears to be not uncommon amongst this and neighbouring genera, but whether the singular form of the mandibles be general I am not able to say for want of other species for dissection.

Although Mr. Stephens detected a solitary specimen of *Zonitis testacea* in the cabinet of the late Mr. Marsham, it has never before been recorded as a British insect, and its name and economy were equally unknown.

During a visit to Dorsetshire in the autumn of 1820, I found a larva in the decayed stump of a tree, which I gave to my friend Mr. Dale, who discovered the beginning of the following March, that it had changed to our insect;—a valuable fact, which proves its affinity in economy to the *Œdemeridæ* of Latreille: we have since been favoured with specimens from Mr. Bennet and Mr. Stone; and last year it occurred in some abundance upon the oaks and white-thorns in the New Forest the end of June and beginning of July.

In the British Museum there is a single unlabelled specimen of another species, of which we know neither the name nor the history.

Vinca minor (the Less Periwinkle) is introduced in the plate.


1
1a
4a
7a
4
3
7
2
6+

[illegible]

113.

ALCIS SERICEARIA.

The Satin Beauty.

ORDER Lepidoptera. FAM. Phalænidæ *Lat.*, *Leach.*

Type of the Genus Phalæna repandata *Linn.*

ALCIS *Nobis.* Phalæna *Linn.*, *Fab.* Geometra *Haw.*, *Hüb.* Hemerophila *Steph.*

Antennæ inserted between the eyes, filiform, bipectinated in the males, simple towards the apex; branches ciliated, arising near the centre of the joint (1): simple, hairy beneath, with a bristle arising from each joint in the females (1 a).

Labrum and *Mandibles* larger than usual (2).

Maxillæ long slender, furnished with distinct tentacula towards the apex (3).

Labial palpi porrected, visible viewed from above, not hairy, thickly covered with broad scales very much lengthened beneath, terminal joint not quite concealed (4), 3-jointed, basal joint long, recurved, 2nd nearly as long, 3rd ovate, very minute (4 a).

Males *smaller than the females.* Eyes *rather large, parallel in front* (7). Wings *ample, extended horizontally, superior trigonate, inferior slightly indented.* Abdomen *long, linear, somewhat truncated in the males, shorter and conical in the females.* Legs *rather long and slender.* Anterior tibia *short, with a long spine on the internal edge.* Posterior *very long, robust, hollow, furnished with 2 pair of spurs, a longitudinal suture and a tuft of long silky hair arising at the base, and concealed in the tibia when at rest* (8†). Tarsi *5-jointed, posterior short.*

Caterpillars *loopers with 6 pectoral, 2 abdominal and 2 anal feet.*

SERICEARIA *Nobis.*

Silky brown, speckled irregularly with ochre. Rachis of antennæ pale, rays fuscous. Palpi and head brown; neck, base of antennæ, and a space above the eyes ochre; sides of thorax pale. Abdomen somewhat black, minutely speckled with ochre, the margins of the segments and the apex of the same colour. Superior wings the darkest, a space at the base very dark, a transverse spot near the middle black, an indented transverse line beyond the spot and an obscure interrupted waved line near the posterior margin: nervures dark. Inferior wings fuscous at their base, a transverse obscure spot towards the centre, beyond which is a waved transverse line, dark on the internal, light on the external edge, limb speckled with longish ochraceous spots. Cilia somewhat striped with ochre, margins of wings with 6 or 7 irregular black spots on each.

Var. β. Very pale testaceous, clouded with ochre instead of brown.

In the Cabinets of Mr. Stone and the Author.

Alcis may be distinguished from *Bupalus*, by the males being invariably smaller than the females; the eyes are larger and not so distant in front, the palpi are more porrected, shorter, and not hairy, the maxillæ are very long, the antennæ are not pectinated to the apex: the singular character of the hind legs, which I believe has never before been noticed, is very difficult to detect, except by dissection; the 8th and 9th species do not possess it, and possibly some of the others, of which I either had not males, or they were too valuable to be examined. Many of the *Lepidoptera* have their legs, especially the posterior, furnished with brushes of hair, most probably to balance them in their flight; but none are more curious than those of the males of *Alcis*; the posterior tibiæ are very long and robust, and on the internal side may be traced a longitudinal suture extending the whole length, which from the tibia being hollow can no doubt be opened and the long brush of silky hair may be exserted at the pleasure of the insect. The following are our British species.

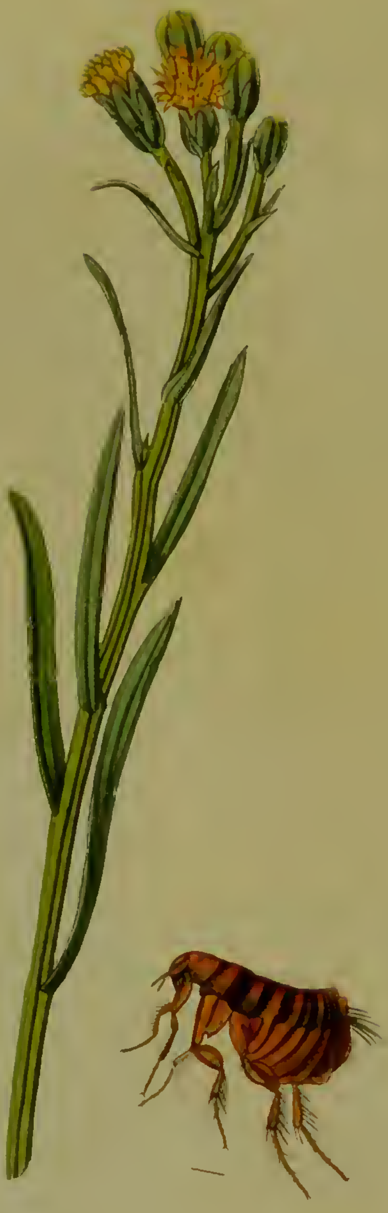
1. Alcis Roboraria *Fab.*, *Don. v.* 15. *pl.* 527.
2. sericearia *Nob.*
3. consortaria *Fab.*, *Don.* 10. 333. 2.
4. conversaria *Hub.*, *Don.* 15. 514.
5. destrigaria *Haw.* 276. 11.
6. repandaria *Linn.*, *Don.* 10. 333. 1.
7. muraria *Nob.*
8. rhomboidaria *Hub.*
9. Australaria *Nob.*
10. consobrinaria *Haw.*
11. fimbriaria *Hub.?*

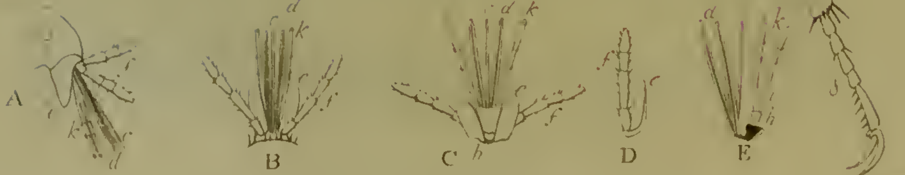
Several females and one male of the nondescript figured were taken last July near Lyndhurst in the New Forest, and are now in the cabinet of Mr. Stone, to whom I am indebted for the species as well as for the loan of the beautiful male represented in the plate. It is probably an oak-feeder, one of the females having been found upon the trunk of that tree, and the other specimens having been beat out of the branches.

A. muraria is a new species that I found upon walls in the Isle of Arran; it is nearest allied to *A. repandaria*; it is however smaller, of an uniform gray, more speckled, and the markings are more obscure.

A. Australaria is an insect from the western counties, resembling *A. rhomboidaria*, but having a deep ochraceous tinge with powerful markings: for the specimen in my cabinet I am indebted to Charles Lyell, Esq., who took it in the New Forest, Hampshire.

Epilobium tetragonum (Square-stalked Willow-herb) is the plant represented in the plate.




A
d
k
f
B
d
k
f
C
d
k
h
f
D
f
E
d
k
h

PULEX TALPÆ.

Mole's Flea.

ORDER Siphonaptera *Lat.* Aphaniptera *Kirby.* Suctoria *Lat.*
Aptera *Linn., Lam., Leach.*

Type of the Genus Pulex irritans *Linn.*

PULEX *Linn., Fab., Lat., &c.*

Antennæ? inserted in two excavations behind the eyes, small, lamelliform, ciliated with spines, having one very short joint at the base. *Lat. Gen. Crust. v.* 4. *p.* 365.

Labrum none.

Mandibles long, slender, compressed, corneous transparent, with a rib down the centre (d).

Tongue as long as the mandibles, slender, filiform, transparent (c).

Maxillæ lateral, somewhat hollow, receiving the base of the palpi, coriaceous, corneous transparent and obtuse at the apex (e).

Palpi robust, 4-jointed, somewhat pilose (f).

Mentum small coriaceous (C. E. h). *Labium* transparent, membranous (E i), from each side of which arises a *Palpus* as long as the mandibles composed of 4 articulations, with a few hairs at the apex of each joint on the external side, and united internally by a continuous membranous dilated margin (k).

Head *small, compressed, rounded above, truncated before, ciliated more or less with bristles.* Eyes *small lateral, generally orbicular* (A). Thorax *composed of 3 segments, to each of which a pair of legs is attached.* Abdomen *larger in the female than male, formed of several rings united on the sides by a sinuated suture.* Legs, *posterior the longest, formed for leaping.* Coxæ *very large.* Thighs *short.* Tibiæ *very pilose.* Tarsi *5-jointed.* Claws *long, slender acute, incurved at their base.* Pulvilli *none* (8).

Larvæ *vermiform.* Pupæ *incomplete, inclosed in a cocoon.*

TALPÆ *Nobis.*

Shining ferruginous. Head nutant. Eyes pale, ovate. Clypeus ciliated with very strong black bristles concealing the mouth. Maxillary palpi with the basal joint the longest? Thorax small cylindric. Abdomen compressed, composed of several joints, the margins of which on the back and sides are ciliated with strong hairs; apex furnished with long bristles. Coxæ long, very much dilated at the base, notched and acuminated on the internal edge in the 4 posterior. Thighs short, compressed, narrowed towards their apex. Tibiæ and tarsi, especially the former, furnished with strong bristles.

In the Cabinet of the British Museum.

WE must content ourselves with referring to Kirby and Spence's *Introduction to Entomology* and to Latreille's *Histoire Naturelle* (tome 14.) for the history and various amusing anecdotes of the Flea, and for figures of the larva and pupa, to Shaw's *Naturalist's Miscellany* (plate 178), and shall proceed to explain the dissections at the bottom of our plate.

A. Represents the head of *Pulex Canis* in profile, with the trophi in a natural position.—B. The trophi seen from above.—C. The same from beneath, showing the lip or membrane connecting the base of the labial palpi.—D. One of the maxillæ, and a palpus attached to it.—E. The trophi in profile, with the maxillæ and their palpi removed to show the origin of the other organs.—8. The tarsus belonging to a fore leg.

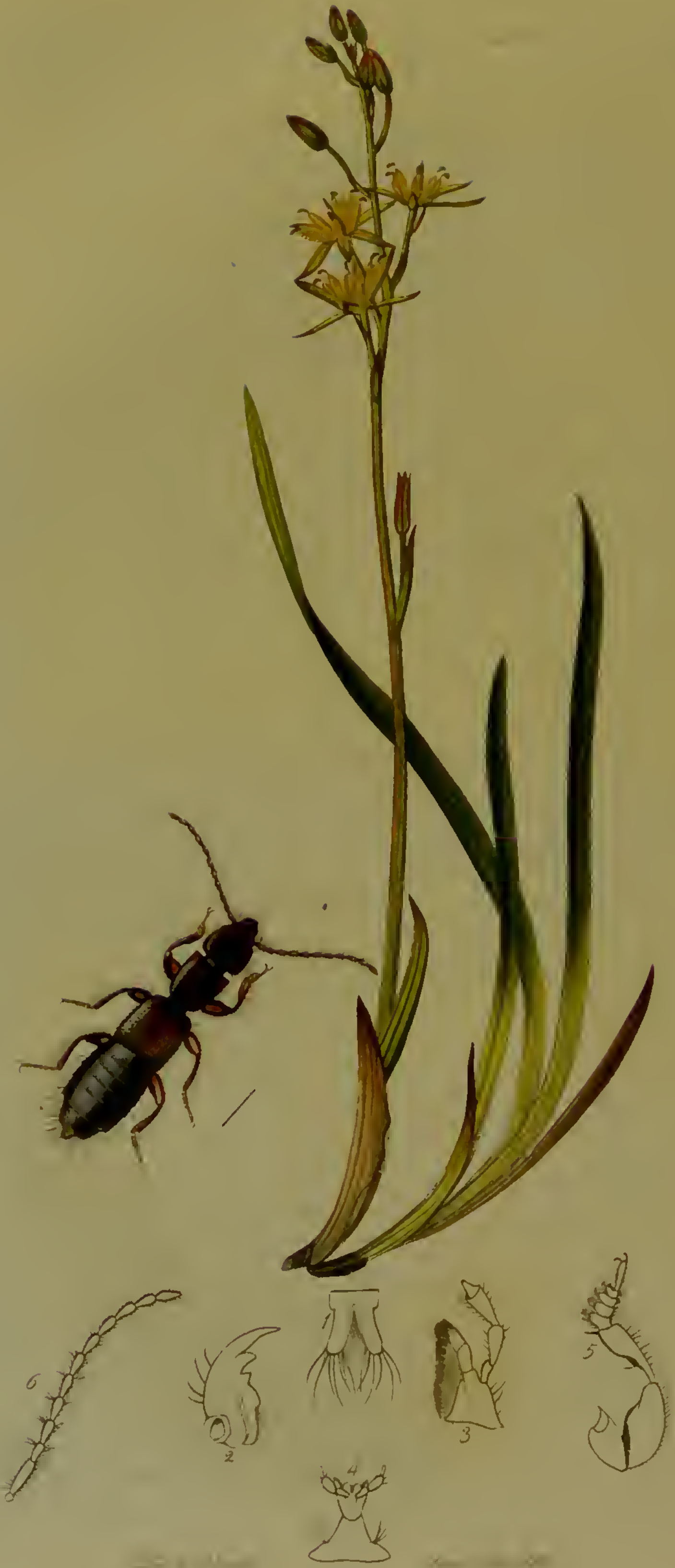
No insect has been more repeatedly examined, or oftener figured than the Flea; yet so incorrectly has it been represented, that most of the figures tend only to mislead the inquirer: the consequence of which (combined with the difficulty of examining the mouth) has been, that the opinions entertained by authors with regard to its affinities are very unsettled. Having had the good fortune some years since to discover the tongue (which had never been noticed or figured until the publication of the *Introduction to Entomology*), I have been induced to make further investigations, the result of which has produced a view of the subject different to that which has hitherto been held.

The cavity behind the eye, which appears to be partly closed by a small lobe that may be distinctly seen to rise and fall, I am disposed to believe is an organ of respiration rather than the analogue of the antenna as suspected by my friend Mons. Latreille; and the absence of spiraculæ down the sides of the abdomen strengthens my opinion. Little as we know of the uses of the antennæ beyond the sense of touch, it is impossible to say that the maxillary palpi may not perform in this order the office of antennæ, and that the orifice behind the eye may not be also adapted to hearing.

We believe *Siphonaptera* will be found connected with the last family of the *Homoptera*, and the first of the *Diptera*, the absence of wings as well as the structure of the rostrulum being analogous to the former; the habit of its larva, its economy, metamorphosis, and the trophi being very similar to the latter.

As there is no doubt but all our wild quadrupeds have a distinct species of *Pulex* belonging to each, we may expect to add many to those already discovered. Our species, the largest I have seen, like the animal it inhabits, has a minute eye, which is oblong and of a ferruginous colour: the specimen figured was taken the latter end of May in Battersea Fields by Dr. Leach, and Mr. Samouelle having no doubt but it is the same as some taken by Mr. Weatherhead off a Mole in June, I have named it after that animal.

The plant figured is *Aster Tripolium*, var. β. (Sea Starwort), flowers without ray.


1
2
3
4
5
6

ACHENIUM DEPRESSUM.

ORDER Coleoptera. FAM. Staphylinidæ *Lat., Leach.*

Type of the Genus Lathrobium depressum *Grav.*

ACHENIUM *Leach., Samouelle.* Lathrobium *Grav.* Staphylinus *Linn., Fab.*

Antennæ long, inserted before the eyes close to the base of the mandibles, filiform, pilose, 11-jointed, basal joint the longest, 2nd the shortest, the remainder clavate, of nearly equal length, terminal joint conical (fig. 6).

Labrum elongated, bilobed, lobes ciliated internally, and producing a few long bristles at their apex (1).

Mandibles large, bent, acute with 2 teeth on the internal edge, the lower one being the smaller (2).

Maxillæ with the terminal lobe small, and membranous at the apex, both densely clothed with soft hair on the internal margin. *Palpi* 4-jointed, pilose, 1st joint small, 2nd and 3rd long clavate, 4th small papillæform (3).

Mentum triangular, anterior portion membranous, truncated. *Lip* produced, forming a strong ciliated process on each side, and 2 rounded membranous lobes in the middle. *Palpi* arising near the centre of the lip, 3-jointed, 1st joint rather small, 2nd subovate robust, 3rd very slender (4).

Depressed. Head *obcordate.* Eyes *lateral minute.* Neck *cylindric distinct.* Thorax *ovate, truncated before, not concealing the contracted base of the alitrunk.* Scutellum *triangular.* Coleoptra *quadrate.* Wings *small, not so long as the elytra.* Abdomen *margined.* Legs *robust.* Thighs *very robust, especially the anterior.* Tibiæ *simple, anterior slender, suddenly dilated towards the apex, ciliated and emarginate internally.* Tarsi *5-jointed, terminal joint the longest, the 4 basal in the anterior pair, very much dilated, pubescent, ciliated beneath with jointed or glandular hairs.* Claws *slender simple* (5, *a fore leg*).

DEPRESSUM *Grav. Coleop. Microp. p.* 182. *n.* 6.

Smooth, shining, pilose. Head and thorax polished, minutely and sparingly punctured, dark castaneous, the thorax having an obscure line down the centre. Scutellum black. Elytra bright ochraceous, black at the base, shaded into castaneous, lightly punctured somewhat in striæ. Abdomen minutely punctured, pubescent, pilose towards the apex, black, anterior margins of segments and terminal joint fuscous-ferruginous. Antennæ, mouth and legs bright ferruginous pilose. Palpi and tarsi ochraceous.

Obs. Specimens are generally less brilliant than the one figured, probably from their being immature.

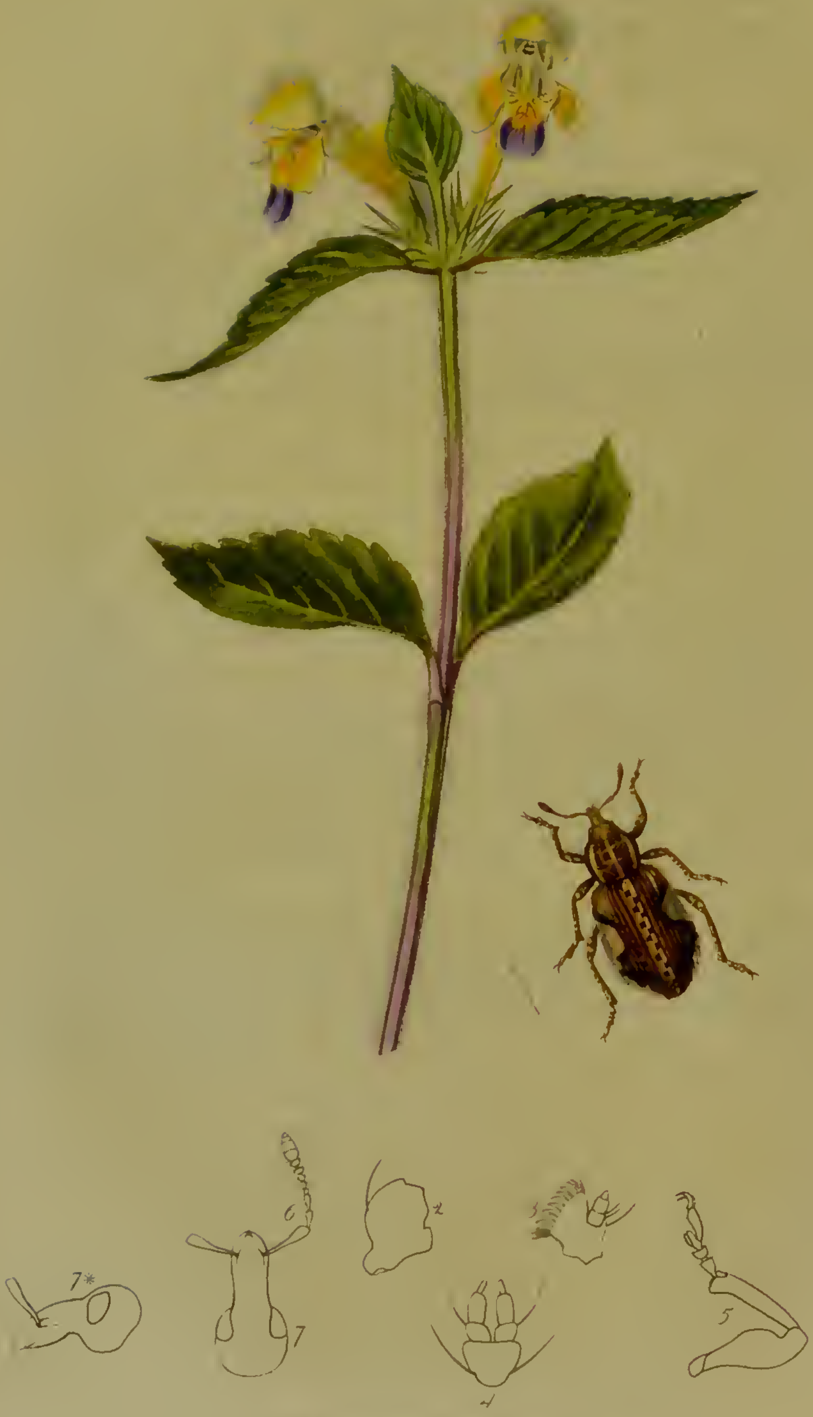
In the Author's and other Cabinets.

It has been observed in the *Entomologist's Useful Compendium*, that *Lathrobium depressum* is the type of Dr. Leach's MS. genus *Achenium*. It is not our intention at present to enter minutely into the characters which distinguish it from that group; we shall therefore only observe that the antennæ are longer, and its form much more depressed than in the genus from which it has been separated.

Achenium depressum is extremely rare upon the continent, being only occasionally met with in Germany and Portugal, and has never before been figured: it was first discovered to be a native of our island by Dr. Leach, and has subsequently been met with by Mr. Chant, Mr. Bentley and Mr. Beck, to whom I am indebted for specimens: a few were taken by them upon the Hackney Marshes during a flood in the month of May.

The habit of our insect renders it probable that it lives beneath the bark of trees; yet its affinity to *Lathrobium* and the neighbouring genera, some of which are very much depressed and live under stones, induces us to think that its economy may be similar; and this latter opinion is strengthened by the recollection that the wings are scarcely more than rudiments: the anterior tarsi, as already described, are curiously covered beneath with transparent hairs having a moniliform appearance, which I should have considered peculiar to the males, had not all the specimens I investigated exhibited the same structure.

The beautiful plant figured, *Narthecium ossifragum* (Lancashire Asphodel), we found tolerably abundant in springy situations in Perthshire, and Mr. Dale has gathered it on Parley Heath, Dorsetshire.


6
2
3
7*
7
4
5

[illegible]

HYPERA FASCICULOSA.

ORDER Coleoptera. FAM. Curculionidæ *Lat.*, *Leach.*

Type of the Genus Curculio punctatus *Fab.*

HYPERA *Germ.* Rhynchænus *Gyll.* Curculio *Linn.*, *Fab.*, *Lat.*, *Marsh.*, *Herbst.*

Antennæ inserted on each side the rostrum, beyond the middle, geniculated, longer than the rostrum, pilose, 12-jointed, 1st joint long clavate, 2nd and 3rd short clavate, 3 following globose, 7th and 8th transverse, the remainder forming a conical pubescent club (6).

Labrum none.

Mandibles irregular in form, with an obscure tooth near the apex and a notch near the base, furnished with only one bristle on the external edge (2).

Maxillæ ciliated on the internal edge with hair and curved spines. *Palpi* not longer than the maxillæ 3-jointed, 1st and 2nd joints robust quadrate, 3rd short conic (3).

Mentum obtrigonate, angles rounded, a long bristle on each side. *Palpi* longer than the mentum, robust, 1st joint subquadrate, with a long bristle on the outside, 2nd subovate, 3rd slender subovate (4).

Head *globose produced into a robust rostrum, slightly curved, somewhat wedge-shaped* (7*). Eyes *lateral placed at the base of the rostrum* (7). Thorax *suborbicular, truncated before.* Coleoptra *large, convex, twice as broad as the thorax, somewhat conical.* Wings 2. Scutellum *minute.* Thighs *sub-clavate, notched beneath near the apex.* Tibiæ *cylindric truncated, anterior curved.* Tarsi *4-jointed, 3rd joint bilobed, 4th the longest* (5, *a fore leg*).

FASCICULOSA *Gyll. Ins. Suec.* 3.107. 37.—fasciculatus *Herbst.*—Dauci *Oliv.?*

Minutely punctured, covered with scales. Antennæ ferruginous, fuscous at the apex. Head brown; upper surface of rostrum, beneath the eyes (which are black) and a line on the crown of the head pale yellowish. Thorax brown, variegated, a line down the centre, one on each side and a spot on each side pale ochre. Scutellum whitish. Elytra obscurely punctured in striæ, brown mottled. Suture ochraceous spotted alternately on each side with black; a large semicircular spot on each side (margined with dark brown), a line near the margin and smaller spots near the apex pale ochre. Legs reddish brown, variegated with hoary pubescence.

Obs. There are strong varieties of this species, some inclining more to black with the spots and markings white instead of ochraceous.

In the Author's and other Cabinets.

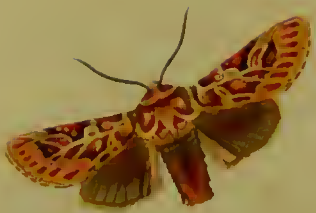
The genus *Hypera* contains the following British insects, many of which are exceedingly common.

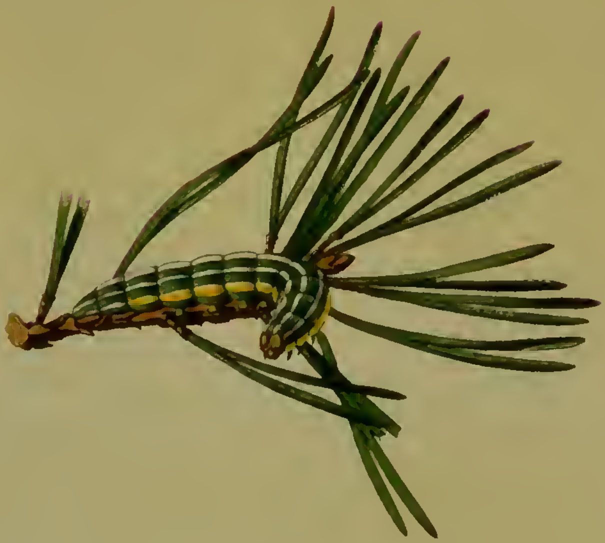
1. H. punctata *Fab.*
2. fasciculosa *Gyl.*
3. picipes *Marsh.*
4. fusco-cinerea *Marsh.*
5. Arundinis *Fab.*, *Panz.* 19. 11.—Sii *Leach* MSS.
6. Polygoni *Fab.*
7. Arator *Linn.* Polygoni *Pauz.* 19. 10.
8. palustris *Leach.*
9. Pollux *Fab.*
10. sublineata *Kirby.*
11. Miles *Payk.*
12. murina *Fab.*
13. postica *Gyl.*
14. Plantaginis *Fab.*
15. Viciæ *Gyl.*
16. variabilis *Gyl.*
17. Trifolii *Gyl.* bitæniatus *Don.* 15. 524 ?
18. Rumicis *Linn.* Acetosæ *Panz.* 42. 9.
19. nigrirostris *Fab.*, *Panz.* 36. 14.
20. straminea *Marsh.*
21. villosula.

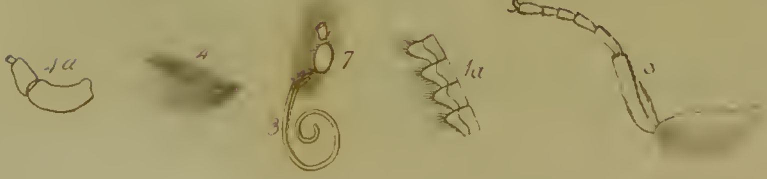
The larvæ of those species whose economy is known, feed upon plants; and many of my readers no doubt have observed upon plants growing near the water's edge, small coarse oval cocoons, like gauze, formed of loose threads which will allow us frequently to see a beetle inside, that generally is the *Curculio Rumicis* Linn. During last July I found several of these cocoons on the underside of the leaves of the plant figured, in a cornfield at the base of Ben Lawers, which shortly hatched and produced specimens of *Curculio Arator* Linn.

The handsome species selected for the plate has been taken in Norfolk, but is by no means common. In May and June the individuals of this genus may be found in sandy places, gravel pits, and upon white walls and substances heated by the sun, as well as upon various plants.

Galeopsis versicolor (Large-flowered Hemp-nettle), above alluded to, accompanies the insect.







Pub. by J. Curtis Lond. [illegible]

117.

ACHATEA SPRETA.

The Pine-destroying Noctua.

Order Lepidoptera. Fam. Noctuadæ *Lat., Leach.*

Type of the Genus Bombyx spreta *Fab.*

Achatea *Hub.*—Bombyx *Fab., Panz.*—Phalæna Noctua *Kob., Panz.*
Antennæ inserted at the back of the head, serrated (1a) and somewhat thickest in the middle in the males, slender in the females, composed of numerous joints, covered with scales above, hairy beneath, the basal joint large and hairy.

Maxillæ long, furnished with tentacula towards the apex (3).

Labial palpi small, very hairy, porrected horizontally (4), 3-jointed, 1st joint curved upward, long robust, 2nd short robust, attenuated, 3rd minute, cylindric truncate (4 a, the scales being removed).

Head *small, nearly concealed.* Eyes *small* (7). Thorax *large hairy.* Abdomen *robust short, very soft and hairy beneath.* Wings *deflexed when at rest; superior obtuse, inferior rather small.* Legs *anterior short.* Tibiæ *anterior short with a small spine on the internal side, 4 posterior terminated by spurs.* Tarsi *5-jointed.* Claws *large* (8, *a fore leg*).

Larvæ *naked with 6 pectoral, 8 abdominal, and 2 anal feet.*

Spreta *Fab. Ent. Syst. t.* 3. *pars* 1. *p.* 455. *n.* 151. *Panz. Faun. Ins. Germ. fasc.* 82. *n.* 24. Piniperda *Kob's Monog. p.* 51. *tab.* 1. *fig.* 1—12.—ochroleuca *Hub.*

Head rosy ochre, thorax of the same colour, the anterior and lateral portions margined with white, a spot in the middle and one on each side white also: antennæ brown. Superior wings ochre variegated with rosy red, sometimes inclining to castaneous, a pale transverse line near the base and another waved and crenated near the posterior margin white and castaneous: between the costa and middle a subquadrate yellowish spot and an oblique subreniform larger spot of the same colour (ochraceous in the middle) connected with the former by a pale line; nervures whitish; cilia pale, the edge dark interrupted: Abdomen and inferior wings fuscous, the former reddish towards the apex; cilia of the latter pale, rosy at the base.

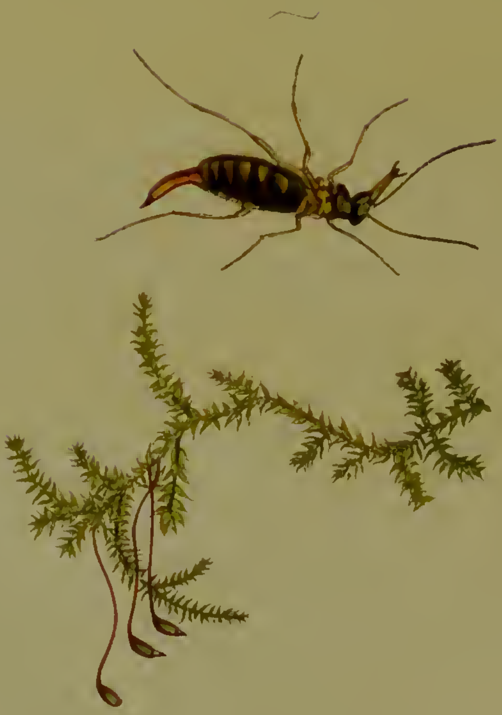
In the Author's and other Cabinets.

ALTHOUGH the Oak and many other trees maintain multitudes of insects, none appear to support more destructive inhabitants than the Pines. On a former occasion we called the attention of our readers to a beetle that destroyed the young Firs, by perforating their shoots; and we now present them with a Moth that in its larva state totally consumes the foliage, sometimes laying waste the pine-forests of Germany.

The larvæ of our insect, like those of *Sphinx Pinastri*, *Bupalus Piniarius*, &c. are striped in a way to resemble the leaves upon which they feed; they are full grown about the end of June, when they descend into the earth and become chrysalides, and the following March the fly appears, at which time no doubt multitudes are destroyed by the inclemency of the season, thereby preventing the serious consequences that occur when such a check is withheld by the Great Author of Nature; who has protected them with a clothing that has a greater resemblance to hair than scales, and no doubt is better adapted to their wants, since we find the same in *Eriogaster Populi*, *Tethea luteicornis* Haw., *Biston hirtarius*, *hispidarius*, *pedarius*, and many other moths that make their appearance at an early period of the year.

A. spreta was described by Fabricius in his *Mantissa Insectorum* under that name, many years before Kob published an account of it calling it *Noctua Piniperda*. Panzer when he figured it in his *Faunæ Insectorum Germanicæ* restored the original name; and we are bound to do the same, although Kob's is certainly more applicable. It was unknown in our British cabinets until 1811, when Mr. Stephens captured a specimen near Hertford, since which time it has been found in the larva state at Birch Wood in Kent, and near Ripley in Surrey, where that gentleman informs me it was abundant last year; at the former place the moth has been found by collectors in the flowers of the white thorn as well as in Norfolk.

For the drawing of the Caterpillar, (which is represented upon a sprig of *Pinus sylvestris*,) we are indebted to Mr. Raddon.



211

118.

BOREUS HYEMALIS.

ORDER Neuroptera. FAM. Panorpidæ *Lat.*, *Leach.*

Type of the Genus Panorpa hyemalis *Linn.*

BOREUS *Cuvier, Lat.*—Panorpa *Linn., Fab., Panz.*

Antennæ approximating, inserted in large deep foveolæ, long, filiform, pubescent, composed of upwards of 20 joints, basal joint large transverse, 2nd robust clavate (fig. 1), the 10 following elongated, the remainder sub-ovate, terminal joint conic.

Labrum produced into a rostrum, horny, apex membranous, rounded and densely ciliated (2 the apex).

Mandibles naked, elongated, nearly linear, truncated obliquely at the apex, and furnished with 7 or 8 small sharp teeth (3 and 3 a).

Maxillæ horny, elongated, united, forming the underside of the rostrum (4); the apex membranous, pubescent, narrow, with the internal angle produced (4 a) : *Palpi* inserted near the apex of maxillæ, long, 4-jointed, 3 first joints nearly equal, 4th elongate conic (4).

Mentum scutiform, horny, received between and divided from the maxillæ by a suture. *Lip* short. *Palpi* terminal, short, biarticulate, basal joint transverse, 2nd slender conic (5).

Rostrum *longer than the head, nutant.* Head *nearly vertical.* Eyes *large lateral.* Ocelli *none.* Thorax *long, 1st segment large, uneven, the 2 following producing short, recumbent, subulated wings in the males; and 2 fleshy scales and 2 appendages in the females.* Abdomen *robust, cylindric, simple in the males; composed of 8 joints in the females, and terminated by an ovipositor composed of an upper valve horny, hollow, acute, 3-jointed, and an under valve dilated bilobed, shorter than the other, coriaceous and rough towards the apex* (7). Legs *simple, hinder pair the longest.* Tibia *with a minute spur.* Tarsi *5-jointed.* Claw *simple dilated at the base.* Pulvilli *none.*

HYEMALIS *Linn. Syst. Nat. t. 1. pars 2. p. 915. n. 3.—Fab. Ent. Syst. t. 2. p. 98. n. 5.—Le Règne Animal, v. 3. p.* 433.

Female, bronzed smooth shining. Head and eyes black the former bronzed; rostrum ochraceous, brown at the apex. Thorax fuscous ochre, anterior segment the darkest. Abdomen dark bronzed with green and reddish purple. Ovipositor ochre sometimes black at the apex. Legs and antennæ pale fuscous ochre, last joint of tarsi black, terminal portion of antennæ black also.

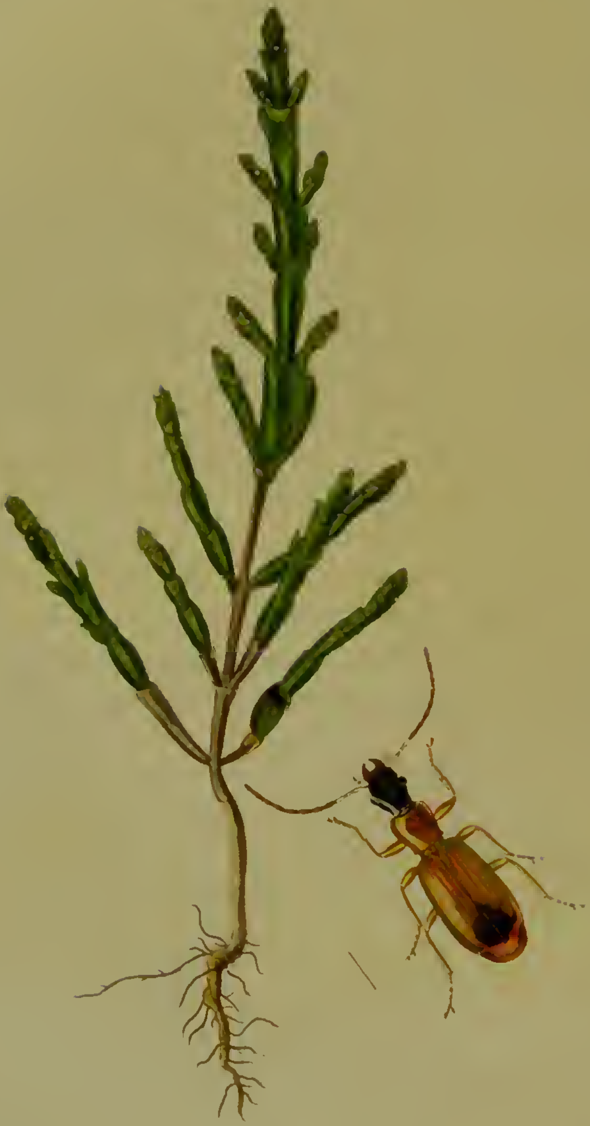
Male. Wings 4, half the length of the abdomen, fuscous, apex incurved, ciliated. *Linn.*

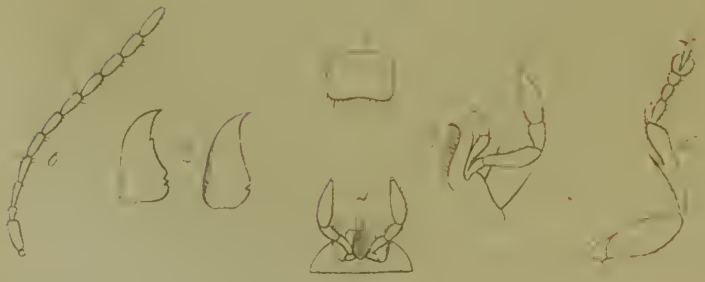
In the Cabinets of the British Museum, Mr. Walker, and the Author.

THE learned authors of the *Introduction to Entomology* have most justly observed that "of all the Linnean Orders this (Neuroptera) appears to consist of the most discordant tribes; so that it seems next to impossible to construct a definition that will include them all:" of the truth of which remark there cannot be a more convincing proof than the genus before us, when compared with the Libellulidæ for example, or even the Filicornes to which section it belongs, and the want of ocelli and reticulated wings excludes it at present even from the family in which it must be included, for the contour of the head and the structure of the trophi prove beyond a doubt its affinity to *Panorpa*, although the ovipositor with which the females are furnished, is different to every thing we can recollect to have seen in any of the Orders, unless it be that of the genus *Psylla;* it is we apprehend, like the appendages of *Blatta*, employed for carrying the eggs as well as for depositing them, for it has no oviduct, and the 2 valves open vertically instead of laterally, as in Orthoptera and Hymenoptera. The mandibles it will be seen are serrated, and not bifid as described by Panzer, and the stalks of the maxillæ unite and form a base for the mentum.

Dr. Leach first added this curious insect to our Fauna by detecting a single specimen at Costessey in Norfolk in the month of December; and last November and January, Mr. Henry and Mr. Francis Walker found 4 or 5 specimens secreted in the moss in a plantation at Southgate; and it is to their handsome contribution of specimens that I have the opportunity of presenting my readers with dissections and an account of this extraordinary genus. It is remarkable that all the specimens hitherto taken in this country have been females, and I have not been able to find even a foreign specimen of the other sex in our cabinets, which I very much regret; they probably may appear earlier than November, and may not reside in the moss as the females do. *B. hyemalis* occurs in Sweden and Germany during the winter, and upon the Alps amongst the snow.

Hypnum velutinum (VelvetFeather-moss), the plant figured, is a little magnified.





DEMETRIAS MONOSTIGMA.

ORDER Coleoptera. FAM. Carabidæ *Lat., Leach.*

Type of the Genus Carabus atricapillus *Linn.*

DEMETRIAS *Bonelli, Sam.*—Rizophilus *Leach.*—Dromias *Germ.*—Lebia *Lat., Gyll.*—Carabus *Linn., Fab.*

Antennæ inserted before the eyes at the base of the mandibles, gradually increasing in thickness to the apex, slightly pubescent, 11-jointed, basal joint the thickest, 2nd small, the following of nearly equal length, terminal joint as long as the 1st, nearly as robust and subovate (fig. 6).

Labrum quadrate, slightly emarginate and ciliated (1).

Mandibles slightly bent, acute, naked; one with a tooth at the base, the other with 3 at the base and one in the middle (2).

Maxillæ bent, horny and acute at the apex, ciliated with rigid bristles internally.

Palpi 2, internal, compressed, 2-jointed, terminal joint short, subovate: external long robust, 4-jointed, 1st joint short, 2nd long clavate, 3rd short, 4th elongate conic, terminated by a vesicle (3).

Mentum transverse, sides lobed, centre obscurely bifid. *Palpi* long, robust, fixed to a short scape, 1st joint subclavate, 2nd subovate, 3rd ventricose, elongate, ovate, terminated by a small vesicle. *Labium* slightly emarginate, membranous at the edges. (4).

Head *oval, narrowed and produced behind.* Thorax *cordiform, truncated before and behind, margined, not broader than the head.* Abdomen *much broader than the thorax, depressed.* Elytra *elongated, not quite so long as the abdomen, and somewhat narrowed towards the base.* Wings *sometimes with rudiments only.* Tibiæ *anterior notched.* Tarsi *5-jointed, basal joint the longest, especially in the hind legs, 4th joint large bilobed.* Claws *simple* (5, *a fore leg*).

Obs. *The dissections are made from D. monostigma.*

MONOSTIGMA *Leach.—Sam. p.* 156.—unipunctatus *Germ. Ins. Spec. v.* 1. *p.* 1. *n.* 2.

Head black shining. Palpi pale. Mandibles and antennæ ferruginous, the latter pale at the base. Thorax dull orange, channelled down the middle, with an impression at the posterior angles. Elytra with 7 obscure striæ on each ochraceous, with a large deep brown spot in the middle near their apex, which runs half way up the suture. Wings rudiments only. Abdomen ochraceous. Legs and underside, excepting the head, pale ochre.

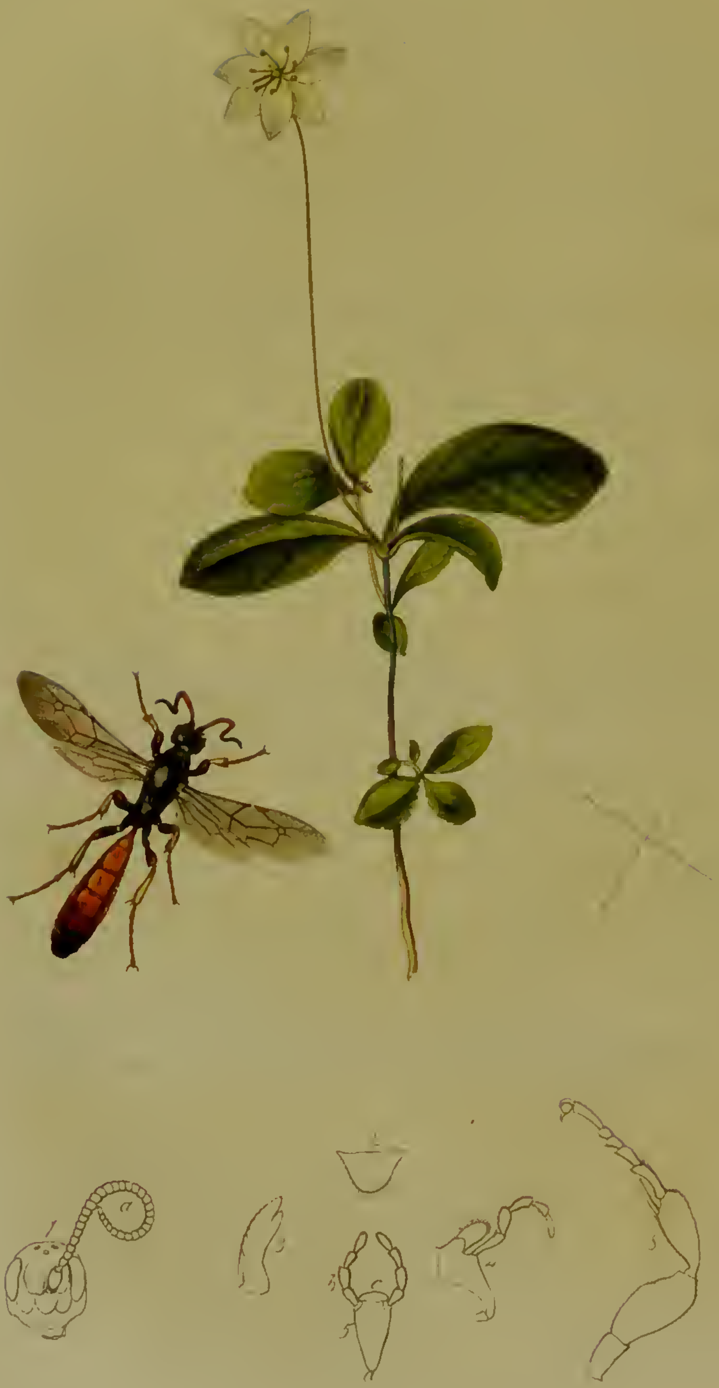
In the Author's and other Cabinets.

The group to which our insect belongs, like the others of Mons. Latreille's divisions of his genus *Lebia*, has been constituted into a genus named *Demetrias* by Professor Bonelli: it may be at once distinguished from *Dromius* of the same author, to which it is closely allied, by the bilobed penultimate joints of the tarsi; and from *Lebia* it differs essentially in many respects, as may be seen by comparing the present dissections with those of plate 87, where that genus is illustrated.

Demetrias appears to be exclusively confined to Europe; and at present contains but 4 species, all of which have been confounded under the name of *Carabus atricapillus:* 2 only of these have at present been recognized as British, viz. *D. atricapillus* and *D. monostigma:* the former pretty insect may be found almost all the year round, under the bark of trees; the latter, which we have figured under the name that it received from Dr. Leach, and which accompanies the description of it in Samouelle's *Entomologist's Compendium*, published several years before Germar's work appeared, was first detected at Swansea, and was formerly considered a rare insect in this country, but has lately been taken in abundance on the coast of Norfolk by the Rev. T. Skrimshire, and at Whittlesea Meer the end of July by Mr. Bentley and Mr. Chant. It inhabits the roots of grass, and conceals itself on the sea-coast under *rejectamenta.*

The plant is *Salicornia herbacea* (Marsh Samphire).

120



ALOMYA VICTOR.

ORDER Hymenoptera. FAM. Ichneumonidæ *Lat.*, *Leach.*

Type of the Genus Ichneumon debellator *Fab.*

ALOMYA *Panz.*, *Fallen.*—Cryptus *Fab.*—Ichneumon *Linn.*, *Fab.*, *Lat.*, *Jur.*

Antennæ inserted below the centre of the face in deep foveæ, approximating, subfiliform, convolute, pubescent, shorter than the head and thorax, composed of upwards of 30 joints, basal joint robust, 2nd small transverse, remainder more or less transverse, excepting the last, which is conic (fig. 1 a).

Labrum obtrigonate, rounded and ciliated anteriorly (2).

Mandibles large, strong, bent, bifid (3).

Maxillæ small membranous, with 2 lobes, external extending beyond the internal and ciliated. *Palpi* long pubescent, 5-jointed, basal joint the longest, 2nd robust, 3 following of nearly equal length and more slender (4).

Mentum elongate trigonate (5 a). *Palpi* long, pubescent, composed of 4 joints of nearly equal length, of which the 1st and 2nd are the most robust (b). *Lip* very short and obscure (c).

Clypeus *broad short.* Head *orbicular, cheeks projecting.* Eyes *small ovate, placed in the middle of each side.* Ocelli 3 (1, *front view of head*). Thorax *elongate ovate.* Metathorax *not cancellated, rounded with a spiracle on each side.* Abdomen *elongated, ovate, convex, petiole short slender incurved.* Oviduct *not exserted?* Wings *shorter than the body, the 2nd submarginal, cell small quinquangular.* Legs *short, posterior the longest.* Coxæ *anterior long.* Thighs *short robust.* Tibiæ, 4 *anterior very short,* 1*st pair having one spine at the extremity, the remainder* 2. Tarsi *much longer than the tibiæ,* 5*-jointed, basal joint the longest,* 4*th the shortest.* Claws *simple.* Pulvilli *distinct* (8, *a fore leg*).

VICTOR *nobis.*

Black, shining, punctured, slightly pubescent. Antennæ ferruginous, 1st and 2nd joints black, terminal portion fuscous. Abdomen ferruginous, the 2 last joints and the posterior margin of the antepenultimate black. Wings pubescent, slightly iridescent, stained fuscous, nervures brown, stigma ferruginous. Trochanters and thighs ferruginous at the apex. Tibiæ and tarsi ferruginous, the former pale in the middle.

In the Cabinet of the Author.

The vast number of species contained in *Ichneumonidæ*, together with the difficulty of seizing distinctive characters, has either caused this family to be totally neglected or but imperfectly understood in most countries, but in none more so than in our own, where the Coleoptera and Lepidoptera, with the exception of the Tenthredoes and Bees, have entirely engaged the attention of the entomologist till within the last few years; by which means not less than 600 species have been confused under the title of Ichneumon, instead of taking advantage of the improvements suggested by our neighbours, which, however imperfect, must form the basis for a more complete division and natural arrangement of this family.

Had Fabricius, who first divided the *Ichneumonidæ* into genera, done it with that care and attention which so difficult a task required, there is no doubt but Latreille would have gone further than he has done into the investigation of them; but the Fabrician system is so perfectly artificial, that the author of it himself could not follow it without making "confusion worse confounded," as is evident from a slight view of the genera in his last work.

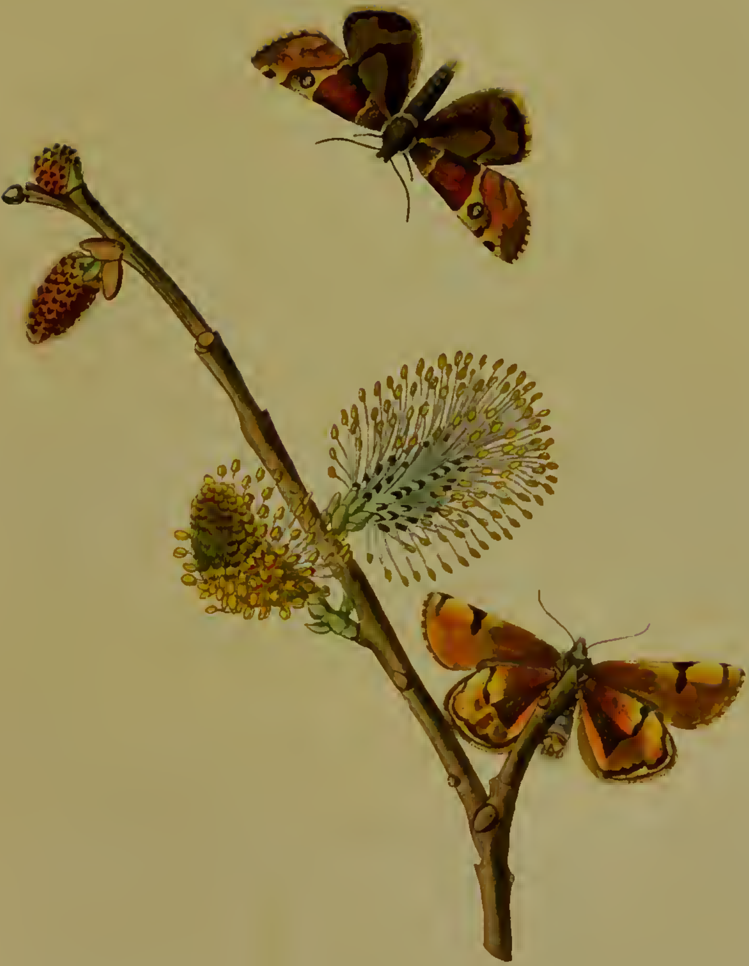
Difficult as the task is, and unequal as we must acknowledge ourselves to perform it, we can only promise to lend our aid by separating groups as opportunities may offer, thereby lessening the mass that at present is nearly unmanageable, which will we hope enable those, who have better opportunities and more leisure than ourselves for studying this family, to accomplish an undertaking so absolutely necessary to a knowledge of the Hymenoptera.

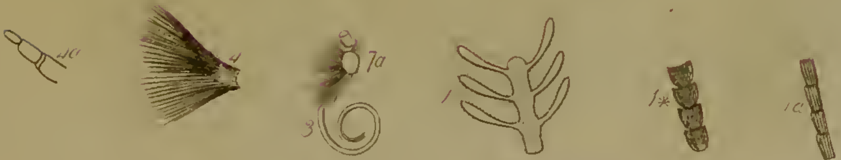
Alomya was first established by Panzer, and has been adopted by Fallen: yet we are so imperfectly acquainted with the sexes, that Jurine and Fallen are at issue respecting them: there are, however, characters which are so evident, that we can recognize the genus at first sight, viz. the comparatively short wings, the long and convex body, the very short thighs and tibiæ, the globose head, and the short and curled antennæ, composed of fewer joints than in most of the genera.

These insects do not appear to fly much; they are generally found running amongst moss and grass, for which purpose their short and strong legs are well adapted. *A. debellator* has been found in Norfolk. *A. victor* I found last summer near Dunkeld; its red petiole distinguishes it from the former insect, which has a black one. We have 2 or 3 other species that are unnamed.

The plant figured, *Trientalis europæa* (Chickweed Wintergreen,) was found at the same time.

121





[illegible]

BREPHA NOTHA.

The Light Orange Underwing.

ORDER Lepidoptera. FAM. Noctuadæ *Leach., Lat.*

Type of the Genus Noctua Parthenias *Linn.*

BREPHA *Hüb.*—Brephos *Och.*—Hemigeometra *Haw.*—Bombyx *Fab., Haw.*—Noctua *Linn.*

Antennæ inserted at the back part of the head close to the eyes, covered with scales above. *Males:* pectinated in *B. Parthenias,* the branches clavate and ciliated (fig. 1) : more robust, very pubescent and without branches in *B. notha* (fig. 1*). *Females:* filiform, slender, and clothed with long scales (1 a).

Maxillæ very long and tapering, having a dilated membranous edge and tentacula towards the apex (3).

Labial palpi covered with long spreading hairs (4), 3-jointed, 2nd joint less robust than the 1st, 3rd slender ovate (4 a).

Wings *rather narrow, horizontal when at rest.* Abdomen *slender, of the males terminated by 2 lateral lamellæ and a dorsal incurved horny process: of the females retuse when the ovipositor is not exserted.* Legs, *anterior rather short.* Tibiæ *anterior with a spine on the internal side, the others terminated by spurs, the posterior having a pair above the apex.* Tarsi 5-*jointed.*

Caterpillars *half-loopers, with* 6 *pectoral,* 8 *abdominal, and* 2 *anal feet.*

NOTHA *Haw. Lep. Brit. p.* 269. *n.* 8.—Parthenias *Hüb. Schmet. Noct.* 74, 341, & 342.

Antennæ of male velvety black. Head, thorax and abdomen black, clothed with brown hair: superior wings lurid ferruginous, speckled with minute silvery scales; blackish at the base, interior and posterior margins; a black sinuated transverse line near the base, and 2 others more obscure, indented, and parallel with the posterior margin, beyond the middle; a black spot whitish in the centre, near the middle, approaching the costa, upon a pale ochraceous attenuated stripe, and 2 other pale spots nearer the apex upon the costa: cilia spotted alternately pale and black: inferior wings bright orange, with a sinuated black margin, an irregular line across the middle, uniting with a spot extending to the base, and the internal margin of the same colour: cilia yellowish, spotted black. Beneath orange, variegated with ochre: superior wings with a black spot near the centre, uniting with a blackish one upon the costa, apex partially fuscous, inferior margin and a spot at the posterior angle blackish: inferior wings similar to the upper side.

In the Author's and other Cabinets.

The genus *Brepha* belongs to a group which, by its half-looping caterpillars (as they are termed), connects the true *Noctuæ* with the *Geometræ;* and although it contains but 2 British species, which resemble each other so much in colour and markings that it is easy to confound them, yet the antennæ of the males are so very different in structure, that they will probably by future writers be formed into distinct genera; however this may be, it is only necessary here to separate them into 2 divisions.

1st, With the antennæ of the males pectinated.

B. Parthenias *Linn.*, figured in *Donovan's Brit. Ins. v.* 7. *pl.* 246. *f.* 1. 1.

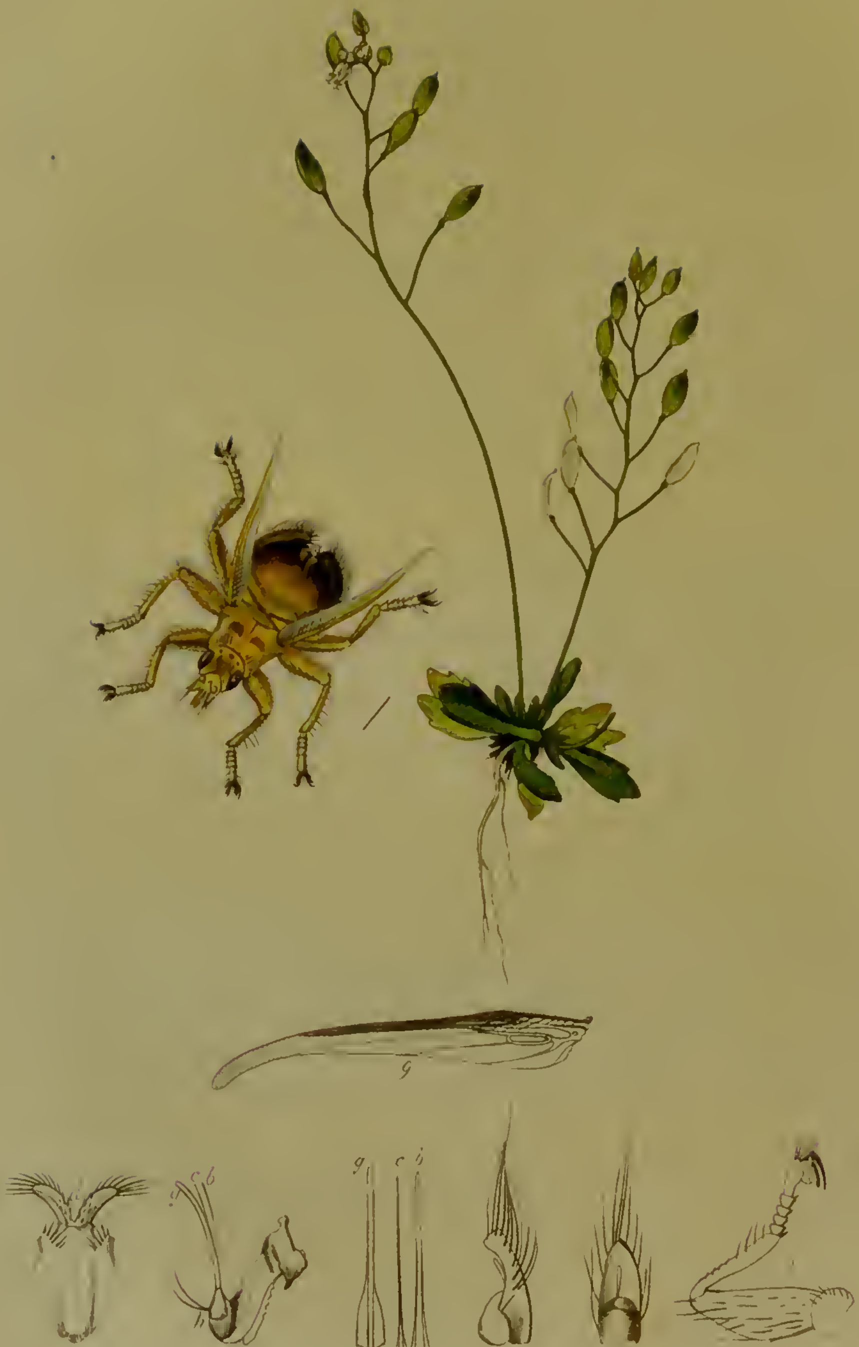
2nd, With the antennæ of the males robust and simple.

B. notha, of which the upper side of the male and the underside of the female are represented in the annexed plate.

The antennæ of the females of the 2 species not furnishing distinctive characters, it will be advisable to state in what respects those specimens have varied in markings that have come under our inspection: and this is principally to be collected from the underside, for the upper side of the superior wings is very variable in both species, the only good character in ours being a more or less decided transverse pale abbreviated fascia arising at the costa, mid-way: the underside, however, supplies more constant characters; the dull colour that tinges the orange from the base of the upper wings does not extend to the black spot on the costa in *B. notha*, the tips are not entirely black, and the black in the under wings does not extend beyond the middle from the internal margin.

B. notha is much rarer than the other species: they are both found in March upon the blossoms of Willows, and fly during the day.

We regret not being able at present to give the name of the *Salix* that accompanies the Moth.


9
4
a c b
2
g c b
1
3
3*

[illegible]

122.

CRATERINA HIRUNDINIS.

Order Omaloptera *Leach.* Fam. Hippoboscidæ *Leach.*

Type of the Genus Hippobosca Hirundinis *Linn.*

Craterina *Olfers.*—Stenepteryx *Leach.*—Ornithomyia *Lat.*—Hippobosca *Linn.*, *Fab.*, *&c.*

Antennæ rigid, porrected, inserted before the eyes, close to the sides of the clypeus, globose at the base, terminated by a concave lobe, clothed externally with long bristles and inclosing a styliform process (3, antenna in profile: 3*, underside of the same).

Labrum horny, hollow, slender, dilated at the base, slightly arcuated, inclosing the tongue (1 b and 2 b).

Tongue nearly as long as the labrum, very slender, dilated at the base (1 c and 2 c).

Lip a horny hollow sheath inclosing the labrum and tongue (1 g and 2 g).

Maxillæ? rigid obtuse pilose, united by a membrane at their internal margin, bent downwards, and extending beyond the head like a beak, and inclosing the proboscis when exserted (4 d).

Mentum large, submembranous, covering and concealing the proboscis (4).

Head *orbicular, divided from the thorax by a suture.* Ocelli *very obscure, 3 in triangle, sunk in foveolæ.* Eyes *lateral, very remote, oval.* Thorax *broader than the head, subquadrate, emarginate before, with two spiracles on each side.* Wings *inserted at the posterior angles of the thorax, longer than the body, narrow acuminated* (9). Scutellum *short broad.* Abdomen *submembranous subglobose, emarginate at the apex.* Legs *extended, large robust, 1st pair attached close to the head.* Tibiæ *simple.* Tarsi *5-jointed, 4 first joints short.* Claws *large strong, each tridentate.* Pulvilli *small* (8, *a fore leg*).

Larva *nourished in the abdomen of the mother, and excluded after transformation.* Lat.

Pupa *inclosed in the indurated skin of the larva, suborbicularly impressed at one end.* Lat.

Hirundinis *Linn. Faun. Suec. n.* 1923.—*Fab. Ent. Syst.* 4. 415. 3.

Dull and pale ochraceous, tinged with olive. Head with a few hairs down the sides, and a brown spot surrounding the ocelli. Thorax surrounded with bristly hairs, and having 2 brownish spots near the middle. Abdomen fuscous towards the apex and very pilose. Wings narrow, curved, pale fuscous, yellowish at the costa, where they are ciliated. Claws black.

In the Author's and other Cabinets.

HAVING upon a former occasion made some remarks upon the Order Omaloptera and taken a view of the structure, which at that time could not be fully illustrated in consequence of the rarity of the species then investigated, we shall here avail ourselves of the opportunity of explaining the figures that we have now the pleasure of laying before our readers, by giving a detailed explanation of them.

The antennæ (fig. 3 & 3*) are very singular in their conformation, and may be called auriculate; the process or style inserted in the globose base has not been before noticed; and in the genus *Melophagus* it is still more extraordinary, being 4-cleft and arising out of an aperture in the globose portion of the antenna, which is hollow.

Fig. 4. shows a great portion of the underside of the head, forming what I have called the mentum; it conceals and protects the trophi when at rest, at which time the ovate base, fig. 2 h, rests within the spot with a row of bristles immediately above the figure 4; the bristles at the anterior angles are peculiar; the maxillæ (d) are similar to those of the neighbouring genera.

Fig. 2. exhibits the trophi, taken out, with the part attached to the head, which from its elasticity and length enable the insect to exsert them the whole length of the lip beyond the mentum; at the base arise 2 curved bristles, probably to regulate the direction of the tongue, &c. when in action.

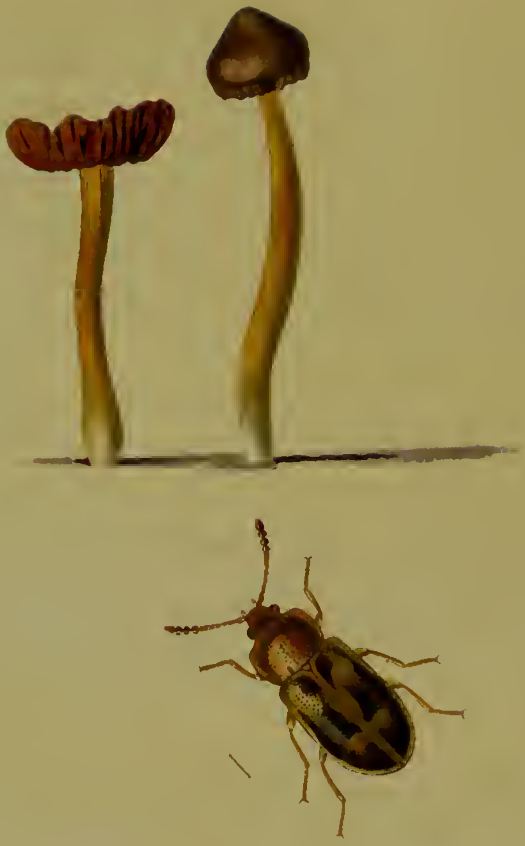
Fig. 1. g, c, b. are the trophi detached, better to show their form.

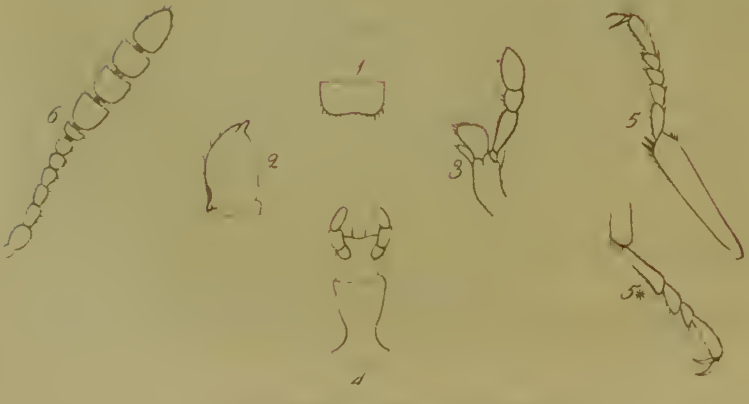
The wings from their disproportionate width cannot; we conceive, enable the insect to fly, but may be useful in assisting it, when accident has thrown it upon its back, to recover its natural position.

It must be confessed, that the poor House-Swallow, whose nest and feathers are infested with this parasite, which (by comparison) is a monster in size as well as in form, is by no means to be envied; and the exhaustion occasioned by supplying nutrition must be very considerable where these insects abound in an individual, as is often the case.

C. Hirundinis is I believe the only species that has yet been discovered of the genus; that inhabiting the Swift (*Hirundo Apus* Linn.) being an Oxypterum.

The plant is *Draba verna* (Common Whitlow-grass).





July 1·1826

123.

TETRATOMA ANCORA.

Order Coleoptera. Fam. Diaperidæ *Leach.* Diaperiales *Lat.*

Type of the Genus Tetratoma Fungorum *Fab.*

Tetratoma *Herbst., Fab., Payk., Panz.*—Boletaria *Marsh.*—Ips *Thunb.*

Antennæ inserted on each side the head at the anterior margin of the eyes, clavate, 11-jointed, basal joint globular, 2nd and 3rd subovate, 3 following subglobose, 7th transverse, cup-shaped, the remainder forming an elongated, perfoliated hairy club, the 3 first joints being nearly quadrate, the terminal one conic (fig. 6).

Labrum exserted, transverse, slightly emarginate, anterior angles rounded, with a few short bristles (1).

Mandibles porrected, small and broad, bifid at the apex, very thin at the internal edge (2).

Maxillæ small bilobed, ciliated, the internal one narrow, the external large. *Palpi* long, very robust, pubescent, 4-jointed, basal joint very minute, 2nd long clavate, 3rd obovate truncate, 4th ovate-conic (3).

Mentum long, cup-shaped, being dilated at the base, and slightly anteriorly. *Palpi* short, robust, naked, 3-jointed, arising near the centre of the labium, basal joint the smallest, 2nd obovate-truncate, 3rd oval. *Labium* heart-shaped, with two bristles near the middle, truncate behind (4).

Clypeus *produced in front.* Eyes *small, prominent.* Thorax *transverse, convex rounded.* Elytra *elongate-ovate, convex.* Scutellum *distinct.* Wings *ample.* Body *oblong convex, that of the female having a retractile tube terminated by* 2 *styles.* Legs, 1*st and* 2*nd pair with the tarsi* 5*-jointed* (5); *posterior pair the longest, tarsi* 4*-jointed, the basal joint being as long as the* 2 *first united, in the others* (5 *). Tibiæ *simple, with a pair of small spurs at the apex on the internal side.* Claws simple.

Ancora *Fab. Ent. Syst. v.* 1. *pars* 2. *p.* 508. *n.* 2.—*Gyll. Ins. Suec. v.* 2. *p.* 555. *n.* 2.

Pale ferruginous, with an aureous cast, shining, irregularly punctured. Head coarsely punctured. Eyes black. Antennæ darkest at their extremity. Thorax coarsely punctured with a fovea on each side upon the posterior margin, which is slightly sinuated. Elytra brassy-yellow coarsely and sparingly punctured, with a large obscure brown spot on each side the scutellum, a dark brown sinuated fascia across the centre, interrupted next the suture, obscure towards the apex. Abdomen beneath and pectus reddish brown. Tarsi ferruginous.

In the Cabinets of Mr. Bennett, Mr. Walker, and Mr. Bentley.

The tarsal system will compel those who follow it implicitly, to place *Tetratoma* very far from *Mycetophagus*: if, however, we follow relations of affinity or pay any regard to natural arrangement, we think they must come together and associate with *Tritoma* and *Triplax*.—In their economy they are all similar, and the 2 former genera approach in form, texture, and in the structure of their antennæ and palpi: it is true that one has the posterior pair of tarsi only, with 4 joints, whilst the intermediate as well as the posterior pair of the other have no more; but this surely can never justify their being placed far asunder, especially when we see that the males of *Mycetophagus* have but three joints in the anterior tarsi, which upon that principle would be as good a reason for removing it to the end of the *Tetramera*, instead of forcing it upon the *Xylophagi*, as the five-jointed anterior tarsi of our genus is to place it amongst the *Heteromera*.

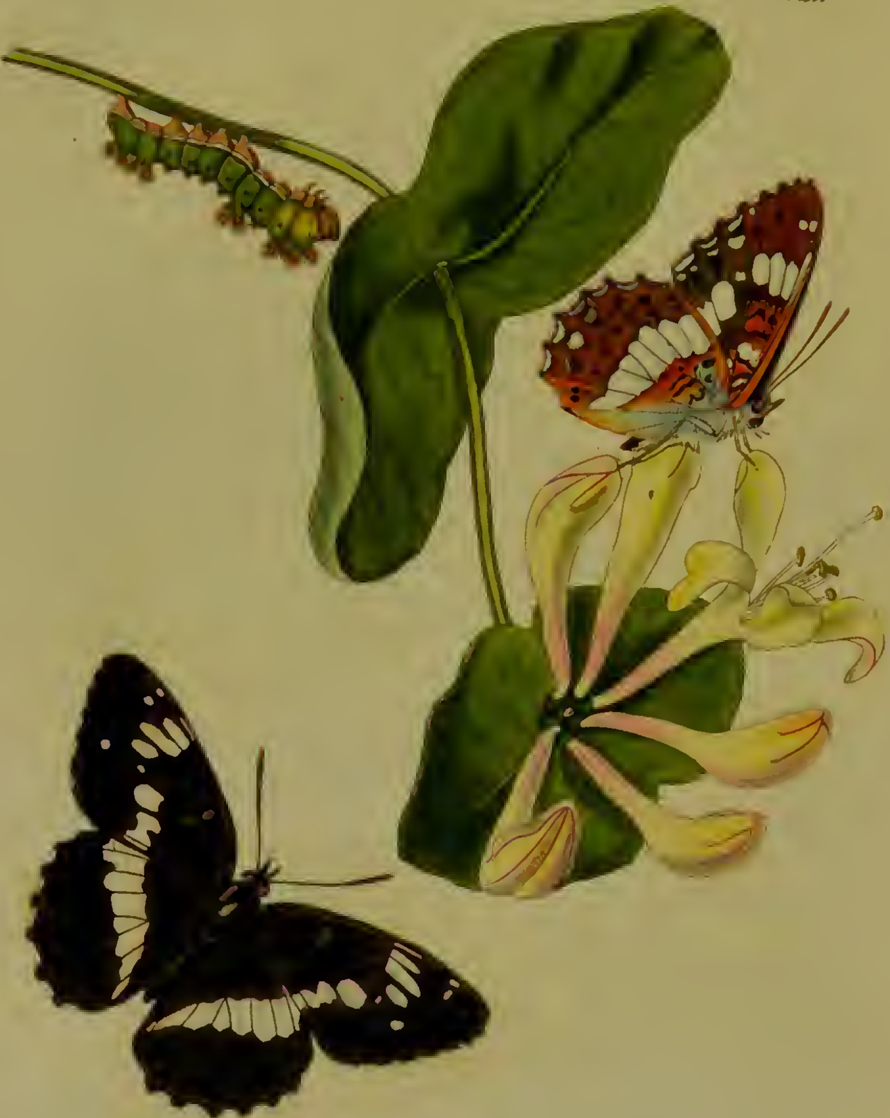
It appears to us that a very natural combination may be established leading from the *Silphadæ* to the *Nitidulæ* in the following manner: 1. *Phosphuga*; 2. *Choleva*; 3. *Mylæchus*; 4. *Agyrtes*; 5. *Scaphidium*; 6. *Scaphiosoma*; 7. *Leiodes*; 8. *Agathidium*; 9. *Phalacrus*; 10. *Atomaria*; 11. *Tritoma*; 12. *Diaperis*; 13. *Triplax*; 14. *Tetratoma*; 15. *Mycetophagus*; 16. *Cryptophagus*; 17. *Meligethes*; 18. *Engis*; 19. *Ips*; 20. *Colobicus*; 21. *Peltis*; 22. *Thymalus*; 23. *Nitidula*. As, however, nothing but dissection can satisfy our minds with regard to absolute affinities, we cannot attempt at present to prove the correctness of our assumption.

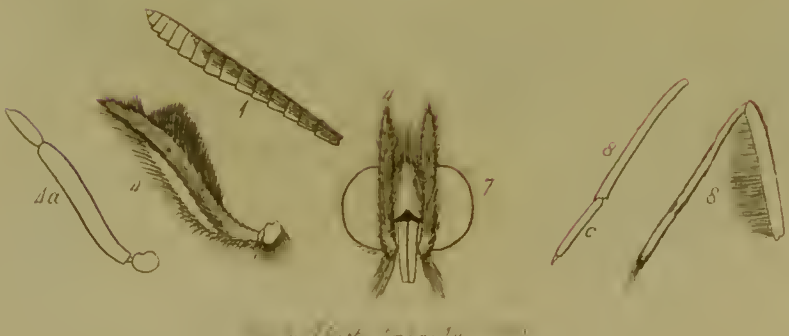
The rare species represented in the plate has not hitherto been recorded as a native of Britain: the specimen figured was kindly communicated by E. T. Bennett, Esq., who captured it at Colney-Hatch, 27th May 1824: we have since been favoured with the sight of another, taken early in the year out of moss at Southgate, by Mr. Francis Walker; and a third I believe was found by Mr. Bentley in a similar habitat at Epping Forest.

Our other species, *Tetratoma Fungorum* Fab. (*Boletaria bicolor* Marsham) is less rare, and is figured in Panzer's *Faun. Germ. fasc.* 9. *pl.* 10. They are both found in the summer in Fungi at the roots of trees, and in winter they secrete themselves in moss.

Agaricus flavipes? Persoon (Yellow-stalked Agaric) is figured in the plate.

124





Pub by J. Curtis London Aug [illegible]

LIMENITIS CAMILLA.

The White Admiral.

ORDER Lepidoptera. FAM. Papilionidæ *Lat.*, *Leach.*

Type of the Genus Papilio Camilla *Linn.*

LIMENITIS *Fab.*, *Leach.*—Nymphalis *Lat.*—Papilio *Linn.*, *Fab.*, *Haw.*
Antennæ inserted on the crown of the head between the eyes cylindric, composed of numerous joints covered with close scales above, terminated by a slender elongated obconic club, denuded at the apex (fig. 1).

Labrum attached to the clypeus minute triangular.

Mandibles attached to the clypeus, remote, parallel, ciliated.

Maxillæ spiral, long and slender, with a minute palpus at the base of each.

Palpi parallel, not contiguous, porrected obliquely, as long as the head, 3-jointed, covered with scales and hair (4, 4), basal joint oval, 2nd long, cylindric, slightly curved, 3rd elongate ovate, slightly mucronate (4 a).

Eyes *pubescent, minutely reticulated* (7, *the head viewed beneath*). Wings *somewhat triangular, not much longer than broad, rounded, entire, a groove on the abdominal margin to receive the body.* Feet *alike in both sexes, the anterior pair very small and slender, the tibia covered with close hairy scales, the tarsus formed of* 1 *joint* (8 c) *covered with close long hair extending beyond the apex, which is terminated by a little claw* (8). 4 posterior legs *long, tarsi 5-jointed, terminated by* Claws *and* Pulvilli, *with membranous pubescent, bifid appendages at the base as in* Venessa.

Larvæ *long cylindric with several pair of obtuse hairy spines on the back and fascicles of hair down the sides.*

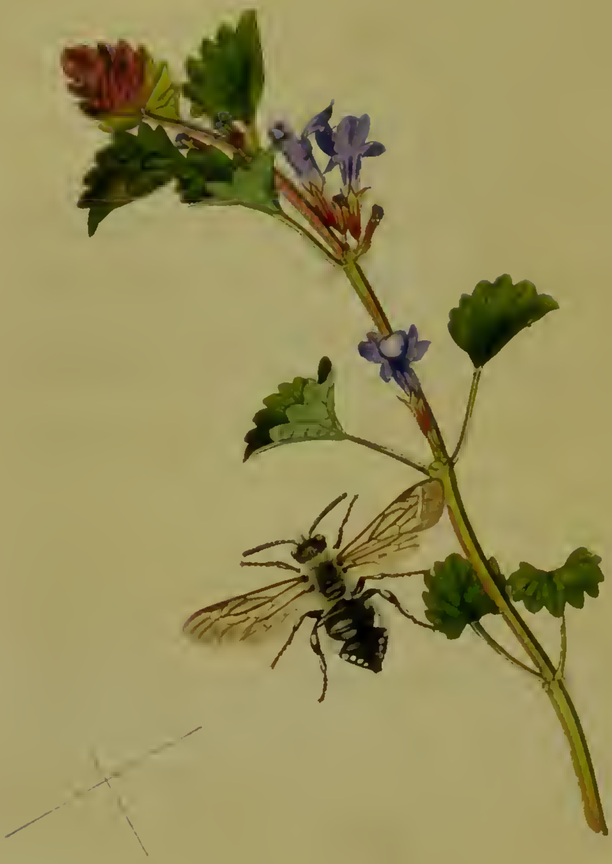
Pupæ *suspended, head case beaked, gibbose on the underside.*

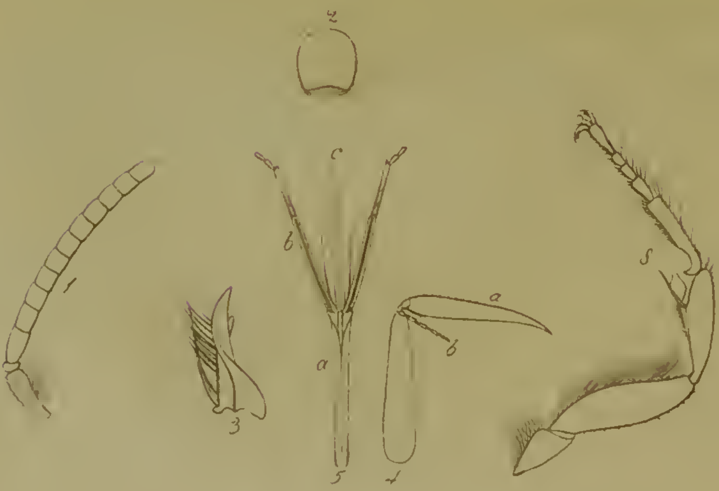
CAMILLA *Linn. Syst. Nat.* 2. 781. 187.—*Haw. Lep. Brit. p.* 29. *n.* 34.
Above dull black, variegated with darker spots; superior wings with 5 large and 5 or 6 small white spots, inferior wings with an oblique white fascia, attenuated towards the anal angle, where there are 2 dull red ocelli, cilia spotted alternately black and white. Beneath ferruginous yellow: superior wings with several white and black spots: inferior pale blue at the base and abdominal margin, a broad white fascia across the middle, a few spots near the margin whitish, and many more black.

In the Author's and other Cabinets.

LIMENITIS *Camilla* is the only species of the genus that has been found in this island, although 4 others are inhabitants of Europe: it is celebrated for its graceful flight, and was formerly tolerably abundant in the neighbourhood of London during the months of June and July. Mr. Samouelle has seen it in Bedstile Wood near Finchley, and at Birch Wood in Kent: we have heard of its being taken not unfrequently at Coombe Wood; and a year or two since the Rev. R. Sheppard captured a considerable number in the vicinity of Ipswich. The egg is said to be unknown; the caterpillar we have copied from Hübner, to make our plate more complete, and hope that we have not erred in so doing; but it is possible that it may be the larva of *L. Sibilla*, for Ochsenheimer and all the German writers following Fabricius, still persist in transposing the names of *Limenitis Sibilla* and *Camilla*, although Linneus's definition "*angulo ani rubro*" identifies the latter species most completely, and proves satisfactorily that our insect is his *Camilla*. We are aware that his reference to Rœsel's figure is incorrect; but surely his description is to be taken in preference to his illustration, which might have been left to a less experienced hand.

The caterpillars of both insects feed upon the different species of *Lonicera*; that introduced in the plate is *L. Caprifolium* (Pale Perfoliate Honeysuckle).





[illegible] Lond. July 1 1826

MELECTA PUNCTATA.

ORDER Hymenoptera. FAM. Apiariæ *Lat.* Apidæ *Leach.*

Type of the Genus Apis punctata *Fab.*

MELECTA *Lat., Fab., Panz.*—Crocisa *Jur.*—Apis *Linn., Fab., Kirby.*

Antennæ inserted near the middle of the face, remote, filiform, of equal length in both sexes, submoniliform and 13-jointed in the males (fig. 1), 12-jointed in the females, 1st joint elongated, hairy, 2nd minute, 3rd longer than the following, terminal joint subquadrate.

Labrum large, inflected, convex, rough, pubescent, ciliated and emarginate before (2).

Mandibles folding over the proboscis, rather long and slender, dilated at the base, acute, with a tooth on the internal edge, pilose externally (3).

Maxillæ long, coriaceous, terminal lobe lanceolate, acute, inflected (4 a). *Palpi* long, 5-jointed, 1st and 2nd joints more robust than the remainder, which are very slender and nearly of equal length (4 b).

Mentum elongated, slender linear, pubescent towards the base (5 a). *Palpi* longer than the lip, 1st and 2nd joints compressed, membranous at the edges, basal joint very long, 2nd shorter, pubescent at the apex, 3rd arising near the apex of the 2nd, small clavate, 4th small, elongate, ovate (b). *Tongue* membranous, often reflexed, as long as the 2 first joints of the palpi, slender, slightly attenuated (c) : *lobes* more than half the length of the lip, setaceous, dilated at the base.

Head *broader than the thorax.* Ocelli 3 *in triangle.* Scutellum *bidentate.* Abdomen *ovate-conic.* Superior wings *with* 1 *marginal and* 3 *submarginal cells.* Stigma *minute.* Tibiæ *short, slender at the base, slightly pubescent, anterior with a winged spine on the internal side.* Tarsi *pilose, long, 5-jointed, basal joint very long, incurved at the base and emarginate in the anterior pair, 3 following short, terminal joint longer, clavate.* Claws *deeply bifid.* Pulvilli *distinct* (8, *a fore leg*).

Obs. *The dissections are taken from a male.*

PUNCTATA *Fab. Ent. Syst. v. 2. p. 337. n. 99.—Kirby Mon. Ap. Ang. v. 2. p. 219. n. 35.*

Black, shining, minutely punctured. Head and thorax densely covered with yellowish gray pubescence; scutellum with black pubescence : basal joint of abdomen covered with silvery pubescence, especially in the males, 2nd joint with a whitish spot on the side, the 3 following with a pure white spot on the side of each. Wings transparent, margined, and a little clouded with fuscous. Tibiæ with silvery pubescence at the base. Tarsi silvery externally.

In the Author's and other Cabinets.

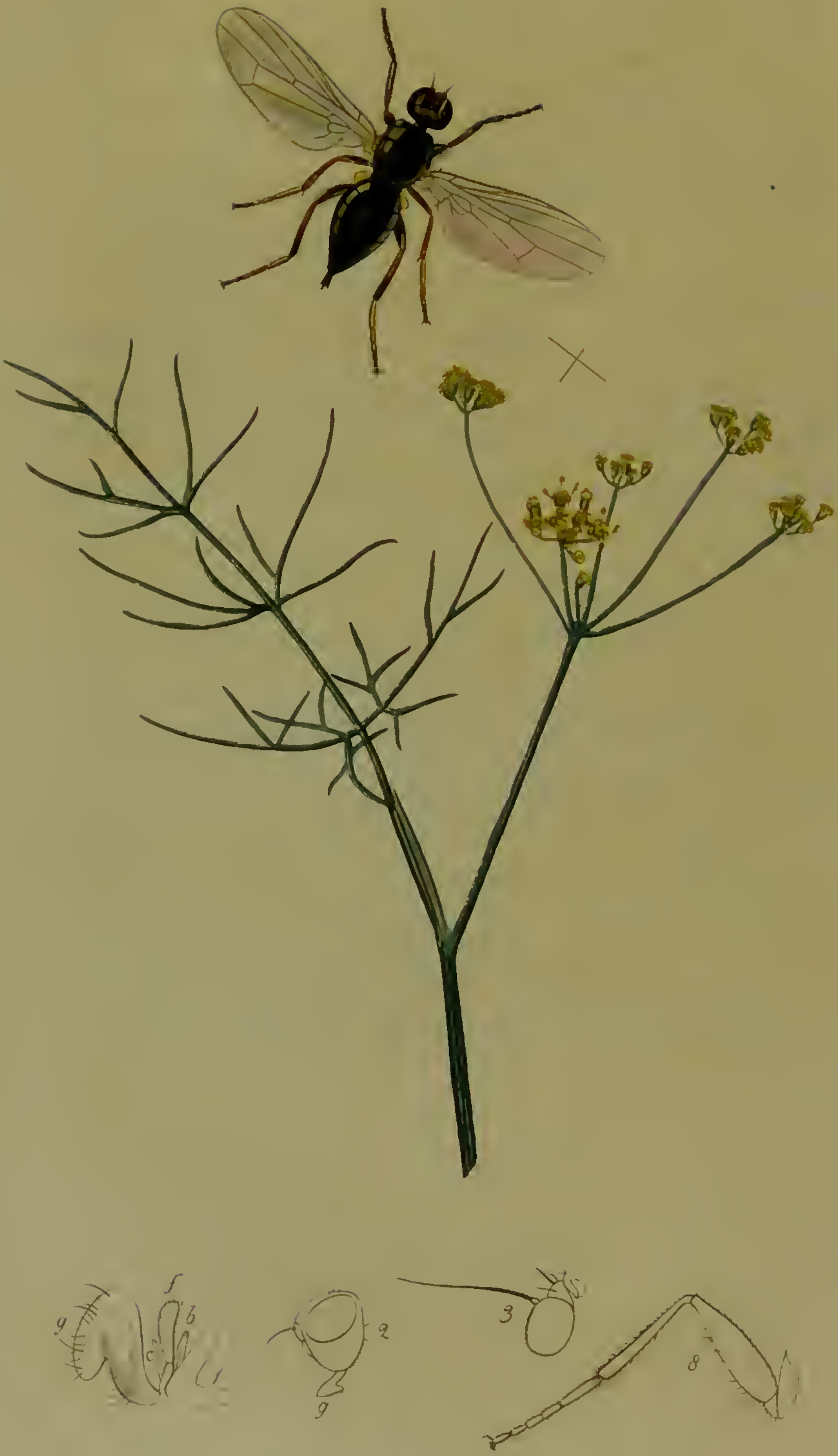
This Genus, which approaches nearest to *Epeolus*, is distinguished from it by the long pubescence with which the head, thorax, and base of the abdomen are clothed; and upon an examination of the trophi, by the remarkable long and bristly laciniæ or lobes at the base of the tongue, and also by its long and 5-jointed maxillary palpi (described by Latreille and Leach as 6-jointed).

The pretty species figured is the only one of the genus found in Britain, where it is universally distributed, being plentiful in South Wales, and at Hampstead in the neighbourhood of London; Mr. Kirby has found it near Ipswich, and I have met with it occasionally in Suffolk from March to June. In April I have frequently observed its head of a bright orange colour, from its being covered with the pollen, I suspect, of *Ulex Europæus*, as I have seen it early in the morning traversing sunny banks where the Furze was in flower.

Our bee is fond of dry banks and sandy situations; but we know nothing satisfactory respecting its economy. Mr. Kirby more than 20 years back had reason to believe that it deposited its eggs in the cells of *Anthophora retusa;* and Dr. Leach also supposed it to be a parasite; but we have heard of nothing since either to confirm or disturb these opinions.

The plant figured is *Glechoma hederacea* (Ground Ivy).

126



J. Curtis Lond. July 1. 1826

TYROPHAGA CASEI.

Order Diptera. Fam. Muscidæ *Lat.*, *Leach.*

Type of the Genus Musca putris *Linn.*

Tyrophaga *Kirby.*—Tephritis *Fab.*, *Lat.*—Musca *Linn.*, *Fab.*, *&c.*

Antennæ nutant, inserted at the top of a cavity in front of the face, 3-jointed, 1st joint small, 2nd cup-shaped, with a few strong bristles, 3rd large, pubescent, ovate, from the outerside of which near the base arises a seta, the basal joint being small, the other setiform and very long (fig. 3).

Labrum short, horny, hollow, attenuated, bifid at the apex (1 b).

Tongue nearly as long as the labrum, obtuse, flat and membranous at the apex (c).

Mandibles and *Maxillæ* none.

Palpi 2, longer than the labrum, fleshy, clavate, pubescent and pilose (f).

Lip large, fleshy, membranous at the edges, bilobed, pilose (g).

Proboscis *nearly vertical, exserted, arising from a large cavity at the bottom of the head* (2, g). Head *subglobose, not produced in front.* Eyes *remote in both sexes, rather small.* Ocelli 3, *minute, in triangle.* Thorax *subquadrate.* Scutellum *trigonate.* Wings *divaricating, transparent, containing about* 12 *perfect cells.* Halteres *large, clavate.* Abdomen *linear in the males, lanceolate in the females.* Legs, *middle pair the most slender, hinder the longest.* Tibiæ *simple, hairy.* Tarsi 5*-jointed, slender, attenuated, basal joint long.* Claws *small slender.* Pulvilli *small* (8, *a fore leg*).

Casei *Linn. Faun. Suec. p.* 456. *n.* 1850 *β.*

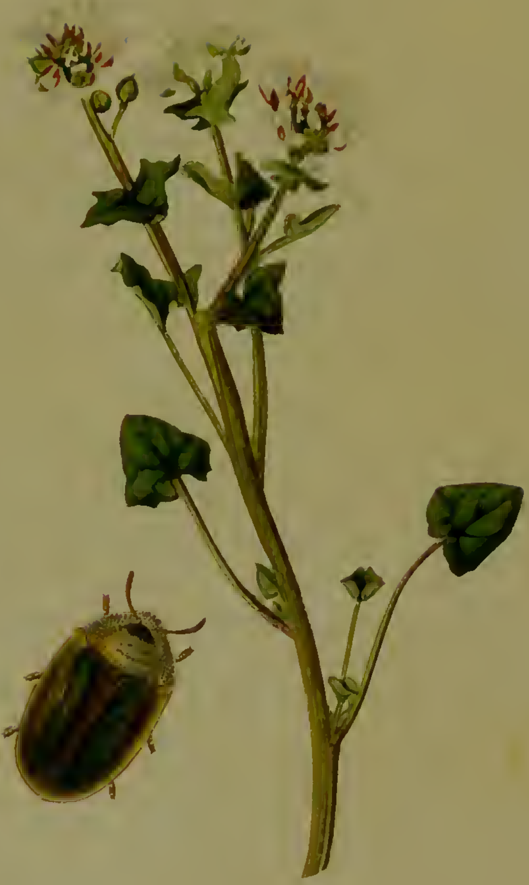
Smooth, shining, greenish black: anterior part of head ferruginous, beneath ochraceous. Wings iridescent, transparent, slightly ferruginous at the base, nervures ochraceous. Halteres ochrey. Coxæ and trochanters ochrey. Thighs ochrey at the base and apex, especially the middle pair. Tibiæ deep ochrey, the first and last pair black at their apex. Tarsi, anterior black, remainder ochrey, the 2 last joints and claws black.

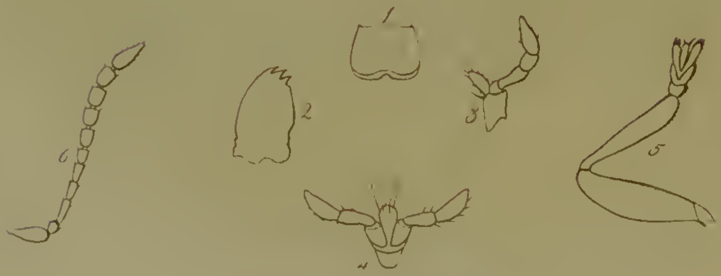
In the Cabinet of the Author.

Every one has observed the curious larvæ in cheese, called maggots or hoppers: it is, however, not generally known that these larvæ turn to flies after having become chrysalides of a bright brown colour; and very few are acquainted with the species that they produce, which was considered by Linneus as a variety of his *Musca putris*, inhabiting dunghills; but as we have bred many hundreds of our insect from cheese, which have all perfectly agreed in having variegated legs, and in wanting the black costa to the wings, we can no longer doubt that *M. Casei* is a distinct species.

There are probably many species belonging to this genus which was proposed by Mr. Kirby in the *Introduction to Entomology*: in addition to the *T. putris* L. and *T. Casei* (a female of which is figured), we may safely add, *M. vibrans* Linn. Swammerdam found the larva would re-animate after being immersed in rain-water 6 or 7 days; and a lady sent me some specimens that had been bred from larvæ that had absolutely had no other food than powdered rhubarb!—We shall close this article with an amusing extract from the *Introduction* above alluded to. "These maggots" (says the author) "have long been celebrated for their saltatorious powers. They effect their tremendous leaps—laugh not at the term, for they are truly so when compared with what human force and agility can accomplish—in nearly the same manner as salmon are stated to do when they wish to pass over a cataract, by taking their tail in their mouth, and letting it go suddenly. When it prepares to leap, our larva first erects itself upon its anus, and then bending itself into a circle by bringing its head to its tail, it pushes forth its unguiform mandibles, and fixes them in 2 cavities in its anal tubercles. All being thus prepared, it next contracts its body into an oblong, so that the 2 halves are parallel to each other. This done, it lets go its hold with so violent a jerk, that the sound produced by its mandibles may be readily heard, and the leap takes place. Swammerdam saw one, whose length did not exceed the fourth part of an inch, jump in this manner out of a box 6 inches deep; which is as if a man 6 feet high should raise himself in the air by jumping 144 feet! He had seen others leap a great deal higher."

The plant is *Anethum Fœniculum* (Common Fennel).




1
2
3
4
5
6

[illegible]

127.

CASSIDA SALICORNIÆ.

The Samphire Tortoise-Beetle.

ORDER Coleoptera. FAM. Chrysomelidæ *Lat.*, *Leach.*

Type of the Genus Cassida viridis *Fab.*

CASSIDA *Linn.*, *Fab.*, *Lat.*, *Marsh.*, *&c.*

Antennæ subclavate, inserted in front of the head, between the eyes, 11-jointed, basal joint long clavate, covered by the thorax, 2nd globose, 3rd longer than the following, the last 5 being more robust and pubescent than the former, terminal joint ovate-conic (fig. 6).

Labrum naked, cordate, truncated at the base, anterior margin membranous (1).

Mandibles somewhat ovate obtuse, with three teeth (sometimes blunt) at the extremity (2).

Maxillæ small, internal lobe membranous minute, external horny pilose. *Palpi* much longer than the maxillæ, 4-jointed, basal joint minute, 2nd longer clavate, 3rd short, 4th longer pear-shaped (3). *Mentum* small. *Palpi* large, arising from two large scapes, 2-jointed, basal joint clavate, 2nd elongate-conic (4).

Head *small, concealed above by the thorax.* Eyes *lateral.* Thorax *somewhat triangular.* Scutellum *distinct.* Coleoptra *shield-shaped.* Wings *long.* Legs *short, scarcely extending beyond the thorax and elytra.* Tibiæ *simple.* Tarsi *hairy, 4-jointed, basal joint small, 2nd bilobed, 3rd large bilobed, 4th not extending beyond the 3rd.* Claws *small* (5, *a fore leg*).

Larvæ *broad, short, depressed, with six feet, spined down the sides, tail forked recurved.*

Pupæ *broad, and flat, thorax very dilated, flat and serrated appendages down the sides.* Reaum. *vol.* 3. *pl.* 18.

SALICORNIÆ *Nobis.*

Male dull greyish ochre, finely shagreened. Thorax smooth, sparingly punctured, having a somewhat reticulated appearance, round the semi-transparent margin. Scutellum triangular, sparingly punctured. Elytra with a broad space down the suture brownish, next to which is a broad stripe of metallic green, not extending to the apex. Beneath black, a broad margin round the abdomen ochraceous. Legs entirely ochraceous. Tarsi and Claws inclining slightly to ferruginous. Antennæ ochraceous, basal and four terminal joints fuscous.

Female smaller, without the vivid green stripe upon the elytra. Skrimshire's MS.

In the Cabinets of Mr. Skrimshire and the Author.

This extensive genus contains some of the most brilliant exotic insects, and of the most extraordinary forms. Their economy is remarkable, and may be investigated by any one who will take the trouble to search the common thistles or horse-mint, upon which the two first species in our list feed in their larva state, and they will be amused and greatly assisted in their researches by consulting the 3rd vol. of Reaumur, the Linnean Transactions, and the Introduction to Entomology.

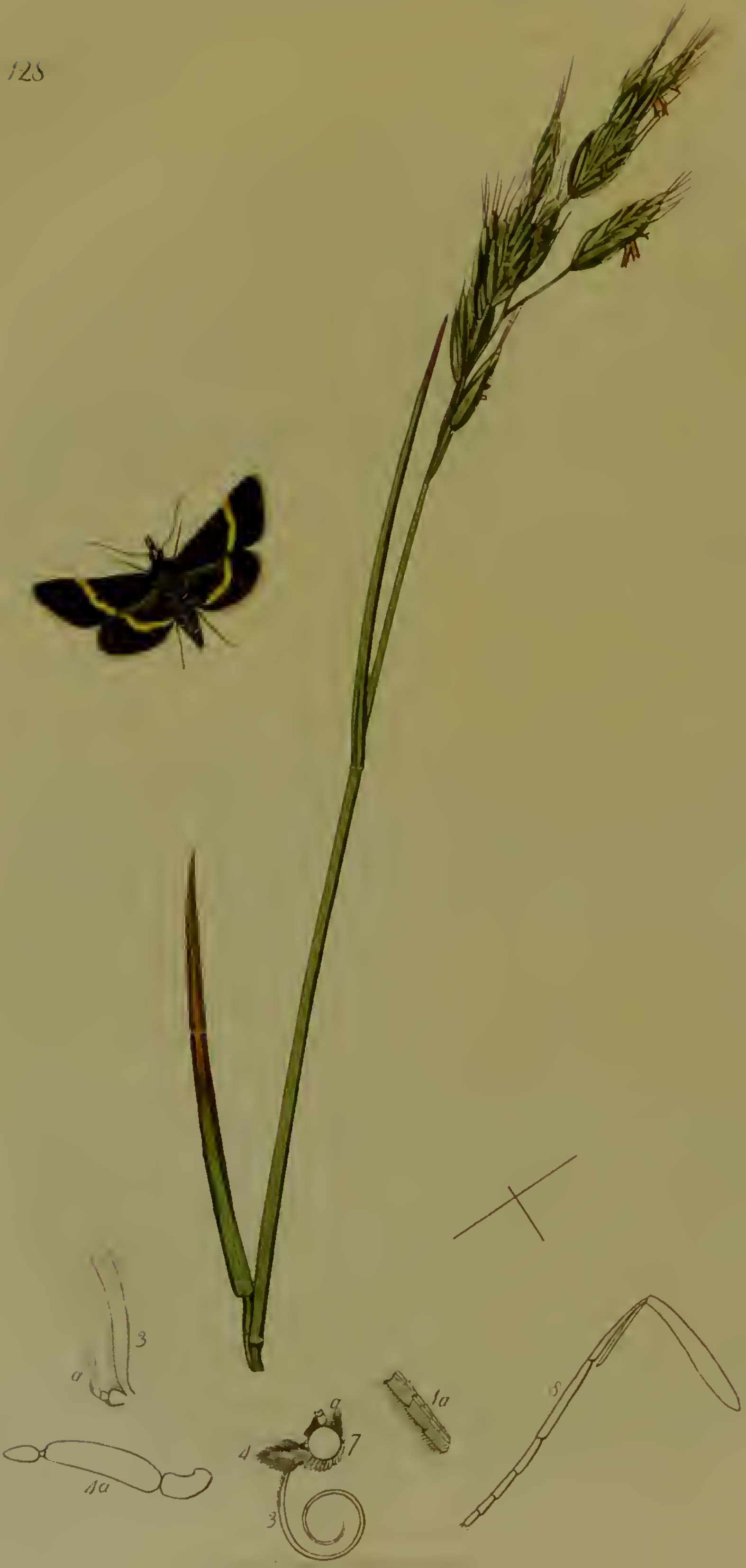
Our British species, as is frequently the case, cannot vie with the extra-European in brilliancy, although we possess a considerable number, most of them being either green or brown, with the exception of two or three, which when alive exhibit a most beautiful metallic appearance, which we regret cannot be done justice to in a coloured engraving.

1 C. equestris *F.*—viridis *Marsh.*, *Panz.* 96. 5.
2 viridis *F.*, *Panz.* 96. 4.—similis *Marsh.*
3 liriophora *Kirby*, *Linn. Trans. v.* 3. *p.* 8.
4 sanguinolenta *F.*—cruentata *Don.* 2. 63. 2. 3.
5 marcida *Sam. Ent. Comp.*
6 obsoleta *Ill.*, *Gyll.*—ferruginea *Marsh.*
7 nebulosa *L.*—affinis *F.*, *Schæff. Ic.* 27. 4.
8 maculata *L.*, *Don.* 8. 285.—murrea *L.*
9 C. vittata *Fab.*
10 anglica *nob.*—reticularis *Wilkin*, *Steph.*
11 margaritacea *F.*—mutabilis *Vill. t.* 1. *f.* 1.
12 Salicorniæ *nob.*
13 nobilis *L.*, *Gyll.*, *Don.* 4. 138. 1. 2. 3.—var. splendidula *Marsh.*
14 Spergulæ *Marsh.*—viridula *Payk.*

The most striking character in *C. Salicorniæ*, which holds in both sexes, is the totally pale thighs, which are black at the base in *C. nobilis*, and a much broader pale margin round the abdomen of the male than in that species as described by Gyllenhal, who has given the *C. splendidula* of Marsh. as a variety of *C. nobilis*, varying in the colour and form of the metallic stripe. It may be here remarked, that after death these beautiful stripes disappear, but it is stated that they may be restored by immersion in hot water; with regard to our species also, the antennæ become fuscous towards the extremity, as well as the tarsi and apex of the tibiæ.

The species we have called *C. anglica* is small, orbicular, and after death retains the pretty green colour it is possessed of when alive: under a lens it is reticulated, which gave rise to the name it has been known by hitherto in the London and Norfolk collections, but which cannot be retained, having been already employed by Fabricius for a very different species.

The Rev. T. Skrimshire kindly communicated the sexes of this beautiful insect, which died before I received them; and as I despaired of ever obtaining living specimens, the plant upon which they were found in May and June, and intended to accompany them, was published in the 119th plate; that now introduced is *Cochlearia Danica* (Danish Scurvy-grass) which I gathered this spring at Southwold, on the coast of Suffolk.


3
a
4a
a
4
7
3
1a
8

128.

PYRAUSTA CINGULALIS.

The silver-barred Sable.

Order Lepidoptera. Fam. Pyralidæ *Leach.* Crambites *Lat.*

Type of the Genus Pyralis purpuralis *Linn.*

Pyrausta *Schr.*—Botys *Lat., Leach.*—Pyralis, *Linn., Hüb., Haw.* Crambus *Fab.*—Phalæna Geometra *Linn.*

Antennæ nearly capillary, alike in both sexes, inserted between the eyes on the crown of the head, composed of numerous elongated joints, covered with scales above, hairy beneath, basal joint robust (fig. 1 a, a few joints magnified).

Maxillæ spiral, very long and slender, covered with small scales on the external surface towards the base (3). *Palpi* small exserted, arising from a lobe at the base of the maxillæ, covered with scales which extend far beyond the apex, composed of three small joints (3 a).

Labial Palpi porrected like a beak, longer than the head, robust, covered with scales which extend far beyond their apex (4), 3-jointed, basal joint short curved, 2nd long, slightly attenuated, 3rd small ovate (4 a).

Head *rather small, covered with long scales, close on the forehead* (7). Wings, *superior covering the inferior when at rest, slightly deflexed, and forming a triangle.* Ocelli 2, *remote, situated behind the antennæ* (7 a). Legs *long, anterior pair with the tibia much shorter than the femur, with a long spine on the internal side.* Tibiæ *of the 2nd pair with spurs at the apex, of posterior with spurs also above the apex.* Tarsi 5*-jointed, basal joint as long as the tibia in the anterior pair.* Claws *minute.* Pulvilli *minute* (8, *a fore leg*).

Caterpillars *with* 6 *pectoral,* 8 *abdominal and* 2 *anal feet?.*

Cingulalis *Hüb. Schmet. Pyr.* 5. 30.—cingulata *Linn. Faun. Suec.* 1303.

Brownish black, slightly tinged with purple. Head and palpi beneath dirty white; superior wings with a sinuated narrow pale ochraceous stripe parallel to the posterior margin, continued across the inferior wings and forming a semicircular line; ciliæ white at their extremities.

In the Author's and other Cabinets.

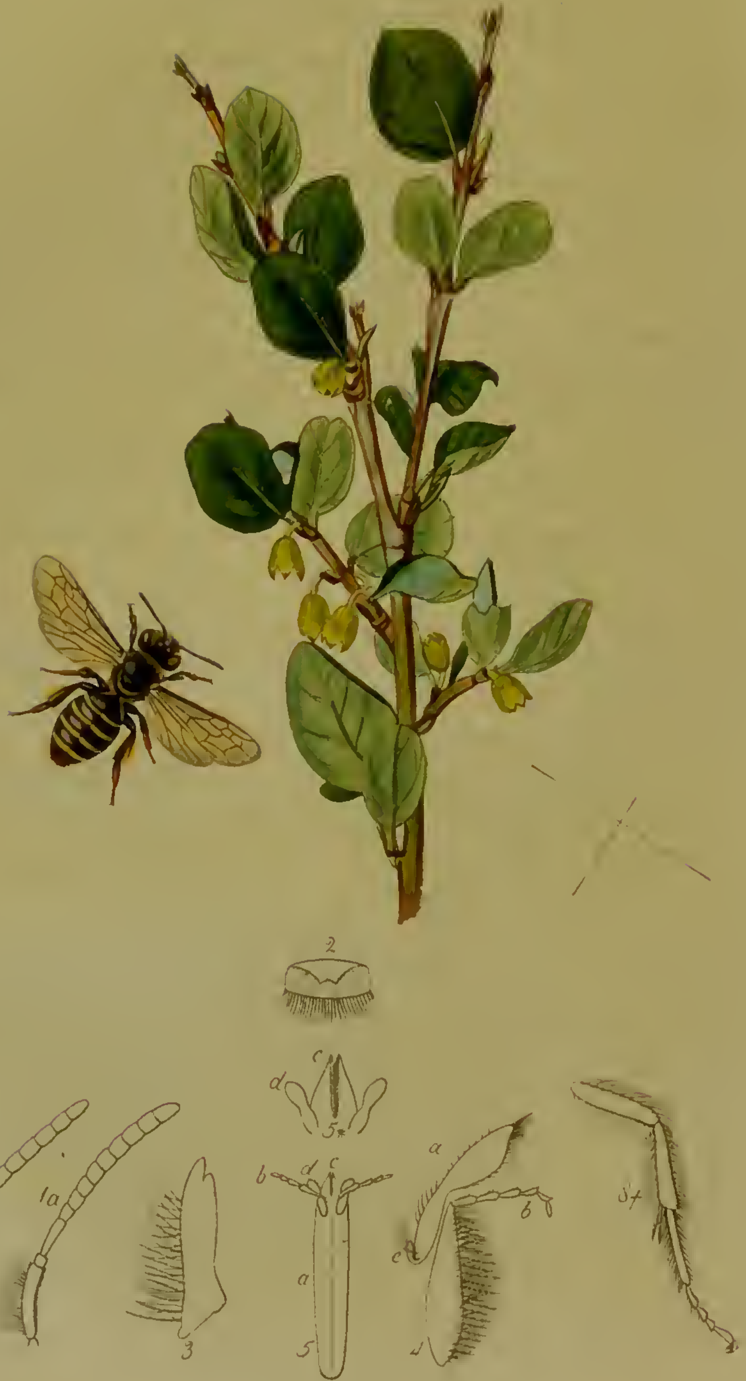
All the species that form this beautiful group are day-flying insects, and are generally to be seen hovering about grassy situations when the sun shines. Germar informs us that Schrank in the *Fauna Boica*, II. 2, 164, has named them *Pyrausta;* but as we have never seen that work, we do not know whether he has given any characters. We believe the ocelli, so very similar to those of *Ægeria*, have not been noticed by any author.

The following are the species recorded as British; and it is a little singular that not one has been added to the group since Mr. Haworth described them in his *Lepidoptera Britannica.*

1	P. atralis *Linn.*, *Don.* 8. 266. 4. . .	July. Grassy places Birch wood.
2	purpuralis *L.*, *Don.* 10. 339. 2.	May. Hedges and Heaths.
3	ostrinalis *Hüb.*	July. Hedges.
4	punicealis *Hüb.*	June, July, Aug. Heaths, Hampshire.
5	porphyralis *Fab.*	July. Heaths.
6	cespitalis *Fab.*	July. Chalky places.
7	sordidalis *Hüb.*	April, June, July. Chalky and grassy places.
8	anguinalis *Hüb.*	July. Chalky places. Mr. Walker Southgate.
9	cingulalis *Linn*	June, July. Grassy hills Scotland, Devon.

As all the above species are figured by Hübner we have selected the rarest, which Mr. Dale and myself had the pleasure of capturing in tolerable plenty, as we ascended Arthur's Seat near Edinburgh the end of June 1825. We observed that whenever a cloud obscured the sun, they ran amongst the roots of the short grass to conceal themselves—*P. cingulalis* is also met with in Devonshire, and I believe in Hampshire.

The plant is *Bromus mollis* (Soft Brome-grass.)



Pub. by J. Curtis London Aug. 1. 1826

129.

ANDRENA KIRBII.

Order Hymenoptera. Fam. Andrenidæ *Lat., Leach.*

Type of the Genus Melitta nitida *Kirby.*

Andrena *Fab., Lat., Panz.*—Melitta *Kirby.*—Apis *Linn.*

Antennæ inserted near the middle of the face, remote, filiform, 13-jointed in the males, basal joint not so long, 3rd much shorter than in the female (fig. 1)—12-jointed, subclavate in the females, basal joint long, 2nd short, 3rd long and slender (1 a). *Labrum* convex pilose, strongly ciliated, anterior margin entire (2).

Mandibles long linear, especially in the males, slightly curved, dilated at the base, bifid at the apex, clothed externally with ciliated hairs (3).

Maxillæ rigid, very pilose, terminated by a broad, rather short, subovate ciliated lobe bent at its extremity (4 a), having a small hairy lobe below the palpus near the internal margin (e).

Mentum very long, linear, (5 a). *Palpi* longer than the lip, 4-jointed, basal joint long clavate, the remainder decreasing in length (b). *Lip* membranous, trigonate, acute, grooved and hairy down the middle (c and 5 * c). Paraglossæ or lobes membranous, strangulated in the middle, ciliated at the apex (d and 5 * d).

Males *much smaller and more slender than the females.* Head *as broad or broader than the thorax.* Eyes *lateral, narrow.* Ocelli 3 *in triangle.* Thorax *subglobose.* Scutellum *semicircular.* Abdomen *depressed, broad and ovate in the females, and fringed at the apex, more lanceolate in the males.* Wings *pubescent, especially towards the extremities, with* 1 *marginal and* 3 *submarginal cells, the* 2nd *and* 3rd *receiving recurrent nervures.* Posterior legs *of females very hairy pollinigerous, with a flocculus at the base of the thighs, the tibiæ and basal joint of tarsus (which is shorter than the tibia) furnished with a scopa or brush.* Tibiæ *in the males with* 2 *long spines at the apex.* Tarsi 5*-jointed.* Claws *bifid.* Pulvilli *distinct,* (8 † *hinder leg of male*).

Kirbii *Stephens's MSS. Nobis.*

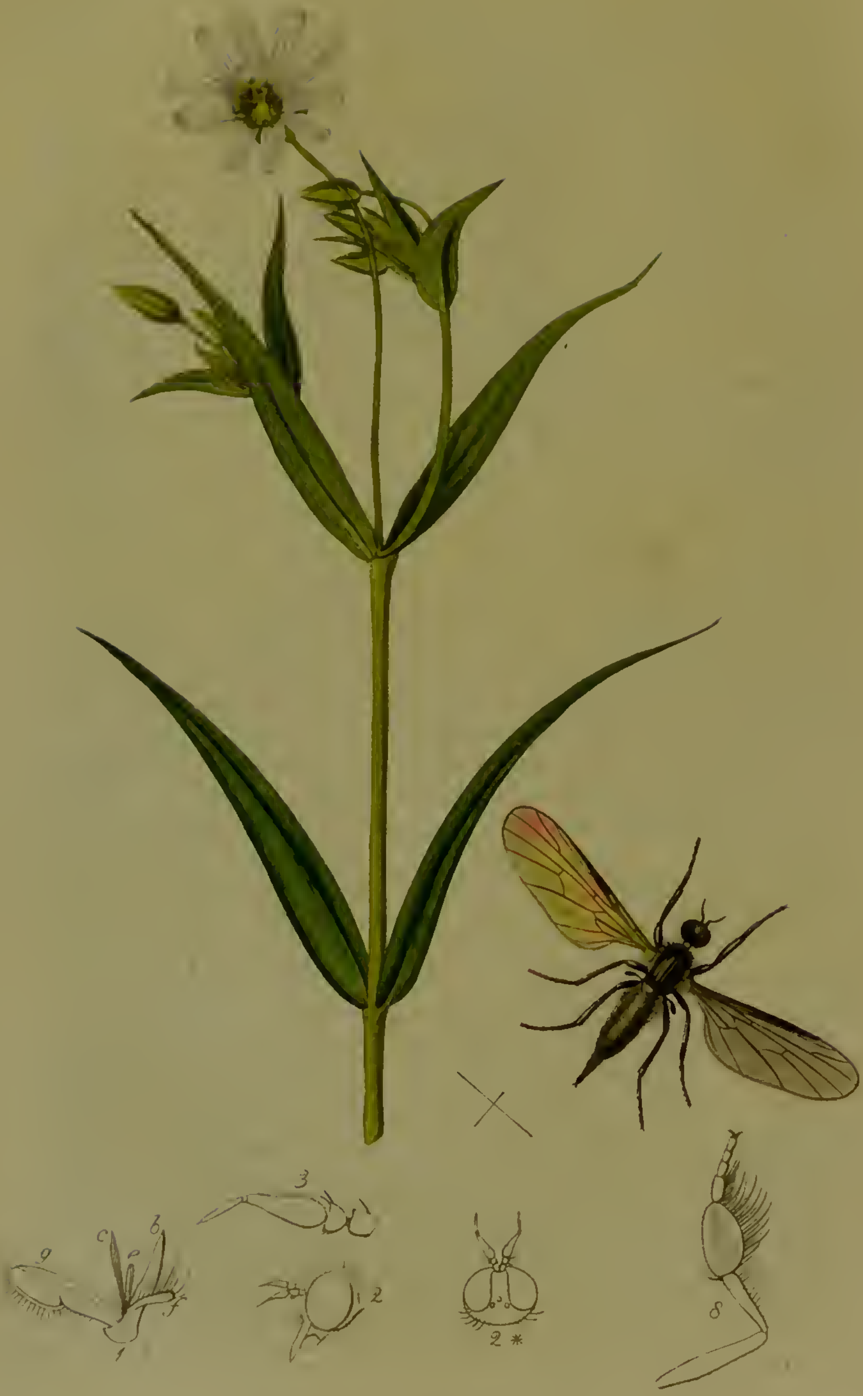
Male unknown. *Female* dull black, shining. Head minutely and closely punctured, face covered with ochraceous hair, eyes and antennæ beneath brown. Thorax sparingly punctured in the disk and covered with short pale ochraceous hairs. Abdomen minutely punctured, pubescent especially at the base, the margins of the segments being thickly ciliated with pale ochraceous hairs forming 4 transverse bands, apex clothed with yellowish brown hair. Wings stained yellowish, posterior margin fuscous, post-costal nervure brown, the others ferruginous. Thighs and tibiæ clothed with pale hair, tarsi ferruginous, the basal joint clothed with pale hair, changing with the light to ferruginous.

In the Cabinet of Mr. Stephens.

There are about 80 British species of this well-known genus, of which we have upwards of 50 named in our own cabinet: most perfect descriptions are given of them in the 2nd vol. of the *Monographia Apum Angliæ;* the following have been detected and named by Mr. Kirby since the publication of his valuable work, viz. *Andrena Hallana*, *fulvescens*, *albescens*, *Spencella*, and *Yeatella*. The reader will also find an account of the habits and economy of this group in the 1st volume, p. 141 of the same work, of which we shall here avail ourselves. "The species of this family usually nidificate under-ground in a light soil, some choosing grass banks over which bushes are scattered, others bare perpendicular sections, but all seem to delight in a south aspect. They excavate cylindrical burrows from five inches to near a foot in depth, and of a diameter sufficient only for the *Melitta* (*Andrena*) to go in and out at. When they make these holes, they remove the earth grain by grain, which forms a small hillock near the mouth; they sometimes run in a perpendicular, and at others in a horizontal direction. The cell at the bottom of these burrows they replenish with pollen made into a paste with honey, and in this they deposit their eggs. The pollen they carry not only upon the scopa of their posterior tibiæ, but also upon their flocculus, and the hairs of their metathorax."—The student will be well rewarded in collecting, by visiting the Sallows when in flower as early as April; and as the males and females are exceedingly different, he should take care to discover if possible the sexes,—many species are attached at later periods to syngenesious and other flowers.

The rare insect figured was in the collection of the late Mr. M. Griffin of Norwich, and was probably taken in the neighbourhood of that city: it now enriches the cabinet of Mr. Stephens, with whom I unite most cordially in naming it after the gentleman to whom we are so greatly indebted for our perfect knowledge of this interesting family.

I feel great pleasure also in introducing a drawing of *Mespilus Cotoneaster*, which I am enabled to do through the kindness of my friend Professor Henslow, who has obligingly communicated specimens, and the following account from W. Wilson, Esq. of Warrington, Lancashire, who discovered it last year in Wales. "The surface of the Orme's head is broken into cliffs and ledges, and upon these cliffs the *Mespilus* grows. It is most abundant within half a mile of the village of Llandidus, but occurs, though much more sparingly, in other parts; and I have seen it at the N.W. extremity of the head. It is indisputably indigenous. The Orme's head consists of limestone."


3
9
c
e
b
f
1
2
2 *
8

HILARA CILIPES.

ORDER Diptera. FAM. Empidæ *Lat., Leach.*

Type of the Genus Empis Maura *Fab.*

HILARA *Meig.*—Empis *Fab., Lat., Harris, Fallen.*—Bibio *Panz.*

Antennæ porrected, contiguous, inserted between the eyes in front of the head, pubescent, 5-jointed, basal joint short cylindric, 2nd cup-shaped, 3rd long ovate, subulated, 4th minute, 5th long cylindric, terminated by a short hair (fig. 3).

Labrum long, horny, hollow, cleft at the apex (1, b).

Tongue long lanceolate acute (c).

Mandibles none.

Maxillæ much shorter than the tongue, obtuse, thin at the edges (e). *Palpi* as long as the maxillæ, very pilose beneath, formed of one long fleshy joint (f).

Lip long, large, fleshy, bilobed, pilose, very membranous at the upper surface (g).

Proboscis *exserted vertically, nearly as long as the head, which is small and globose* (2). Eyes *large lateral, remote, alike in both sexes.* Ocelli 3 *in triangle* (2*). Halteres 2. Abdomen *of male compressed, obtuse, recurved at the apex; of female cylindric, the last three or four joints forming a small tube terminated by a small style.* Wings *incumbent, parallel, ciliated, containing about* 15 *cells, one neor the apex being oblique.* Thighs *and* Tibiæ *simple.* Tarsi 5-*jointed, basal joint the longest, dilated and globose in most of the males* (8). Claws *small.* Pulvilli *bilobed with a seta between.*

Obs. *The dissections are made from a male of* H. cilipes.

CILIPES *Meig. Syst. Besch. v.* 3. *p.* 3. *n.* 1. *tab.* 22. *f.* 3. *mas.*—clavipes *Harris's Exposition, p.* 150. *tab.* 44. *f.* 3. *mas.*

Olivaceous-black, slightly pilose. Head and antennæ black. Thorax with five obscure stripes of a darker colour: Abdomen pubescent, pilose at the base in the female: Legs black. Wings fuscous, very iridescent. Halteres black.

Male. Base of tibiæ ferruginous; tibiæ and 2 first joints of tarsi in the anterior pair of legs clothed with long hairs on the external side, the basal joint of the tarsus being dilated and elliptic (fig. 8).

In the Cabinets of Mr. Stephens and the Author.

HAVING no doubt that Harris's *Empis clavipes* is intended for our insect we should have adopted his name, had not

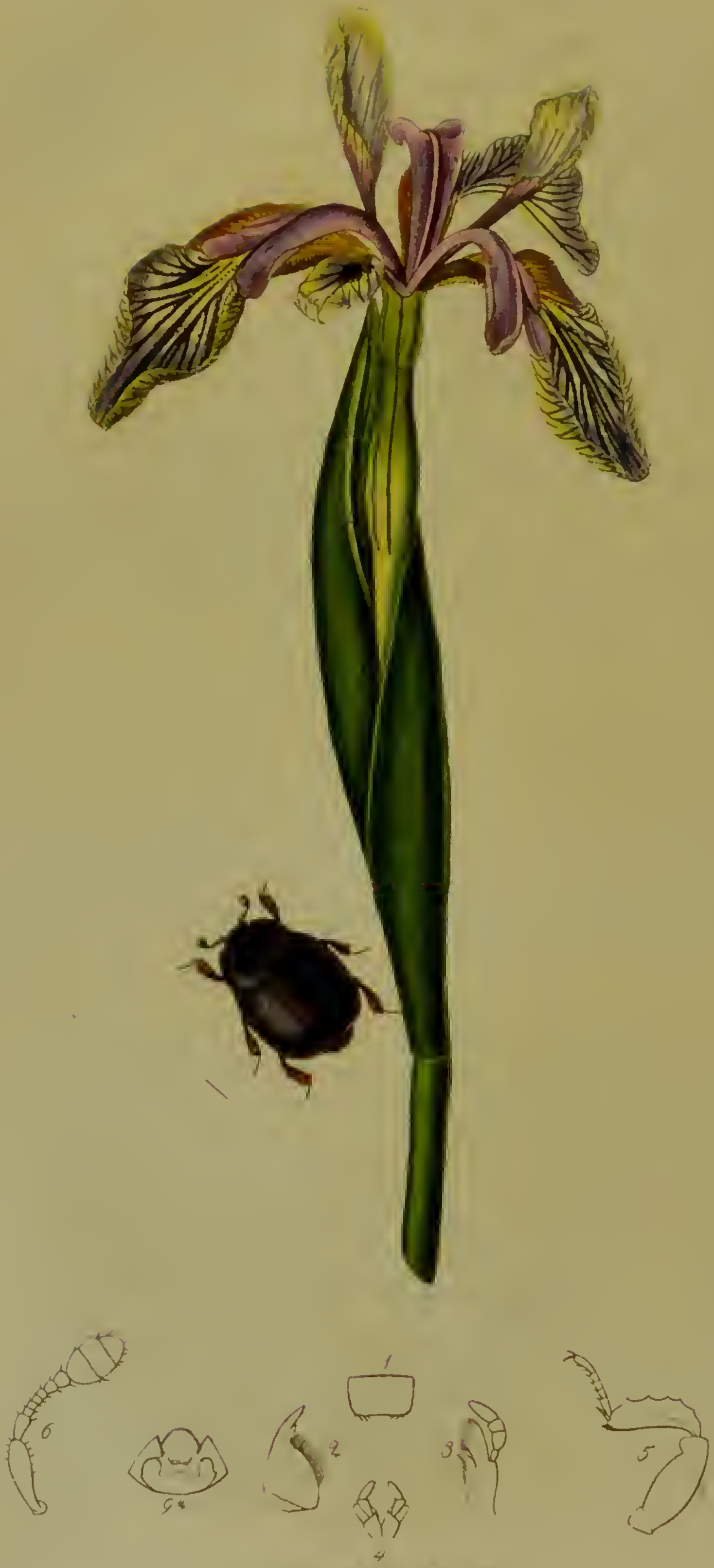
Fabricius described an *Empis clavipes* with which we are unacquainted, and therefore cannot ascertain whether it be a true *Empis* or an *Hilara.* As no figure has hitherto appeared of the female, we have preferred giving that sex, with a fore leg of the male. Although it has not been uncommon in the neighbourhood of London the last two years, we know of no cabinet in which it was to be found, until we gave it to our friends Mr. Dale and Mr. Stephens. The latter gentleman possesses the following British species,

1 H. cilipes *Meig.*
2 globulipes *Meig.*—B. senilis *Panz.* 54. 3.
3 chorica *Fall.*, *Meig.*
4 nigrina *Fall.*, *Meig.*
5 clypeata *Meig.*
6 manicata *Meig.*
7 modesta *Meig.*
8 interstincta *Fall.*, *Meig.*
9 fuscipes *Fab.*, *Meig.*
10 4-vittata *Wied.*, *Meig.*
11 pruinosa *Meg.*, *Meig.*
12 litorea *Fall.*, *Meig.*
13 lurida *Fall.*, *Meig.*
14 flavipes *Meig.*—E. acephala *Panz.* 54. 24.
15 obscura *Meig.*
16 fasciata *Meig.*

H. cilipes is to be seen the whole day flying about little swamps and stagnant water, and alighting upon the surrounding plants in the month of May, amongst which we particularly noticed the flower introduced in the plate, which from its being the only white one, might be the cause of attraction.

I was much amused at the end of the same month by another species (probably *H. globulipes*) which was flying in multitudes over a pond at Hampstead, close to the surface: upon a closer view I saw the males frequently alight upon drowned gnats (*Culices*), holding with their dilated fore feet and whirling about the water with them; probably extracting nutrition from them at the time.

Stellaria holostea (Greater Stitch-wort) accompanies the insect.


1
2
3
4
5
6
9*

DENDROPHILUS SHEPPARDI.

Order Coleoptera. Fam. Histeridæ *Leach.* Byrrhii *Lat.*

Type of the Genus Hister punctatus *Ent. Heft.*

Dendrophilus *Leach, Sam.*—Hister *Linn., Fab., Lat., &c. &c.*

Antennæ inserted on each side the head near the base of the mandibles, slightly geniculated, 11-jointed, basal joint long robust clavate, 2nd shorter clavate, 4 following submoniliform, 7th and 8th larger more robust, the remainder forming an oval pubescent nearly solid club of 3 joints (fig. 6).

Labrum transverse rounded, slightly hairy at the margin (1).

Mandibles small, bent, acute, dilated at the base, ciliated on the internal edge, one with a notch near the apex (2).

Maxillæ with the internal lobe small, the external one ciliated.

Palpi longer than the maxillæ, 4-jointed, basal joint minute, 2 following robust, 4th elongate-ovate (3).

Lip bilobed. *Labial palpi* composed of 2 joints of nearly equal length, 1st clavate, 2nd elongate-ovate (4).

Head *small, sunk in the thorax.* Thorax *transverse, anterior margin beneath produced in the centre* (9*). Body *depressed but convex.* Elytra *not quite covering the abdomen.* Wings *twice as long as the elytra.* Tibiæ *compressed, with a groove on the outer side to receive the tarsi, anterior dilated, slightly serrated on the external edge, with 2 spurs at the apex; posterior less dilated, with a few short teeth on the external edge.* Tarsi *contractile, 5-jointed, basal and terminal joints the longest* (5, *a fore leg*).

Sheppardi *Kirby's MSS.*

Smooth, not very shining, dull castaneous. Head black, minutely punctured; club of antennæ ferruginous. Thorax vermiculated and punctured under a high power. Scutellum none. Elytra minutely and sparingly punctured (appearing shagreened under a powerful lens), each having one straight and five curved, very shallow striæ, extending the whole length.

In the Cabinet of Mr. Kirby.

DENDROPHILUS was a genus established by Dr. Leach in the 3rd volume of the Zoological Miscellany, where by a typographical error which Mr. Stephens pointed out to me, 3 of the species are included in the genus *Platysoma*, which ought to contain only the *Hister depressus* Marsh., and *H. oblongus* Fab.

The kindness of my friend the Rev. Wm. Kirby has enabled me to present my readers with a figure and description of an unique and nondescript species, found in the head of a dead snake at Nacton near Ipswich in 1805 by the Rev. Revett Sheppard, in honour of whom it has received its name.

I am happy in having been able to ascertain satisfactorily that it belongs to the genus *Dendrophilus*, of which it is the largest species, and differs in structure from the type only in having the hinder tibiæ a little more dilated.

The following arrangement of our British species may perhaps be found useful.

* Body subglobose

1 D. Sheppardi *Kirby. Nob.*
2 Curtisii *Leach's MSS.*
3 punctatus *Ent. Heft.*, *Payk. Mon. tab.* 7. *f.* 5.—piceus *Marsh.*
4 seminulum *Kirby's MSS.*

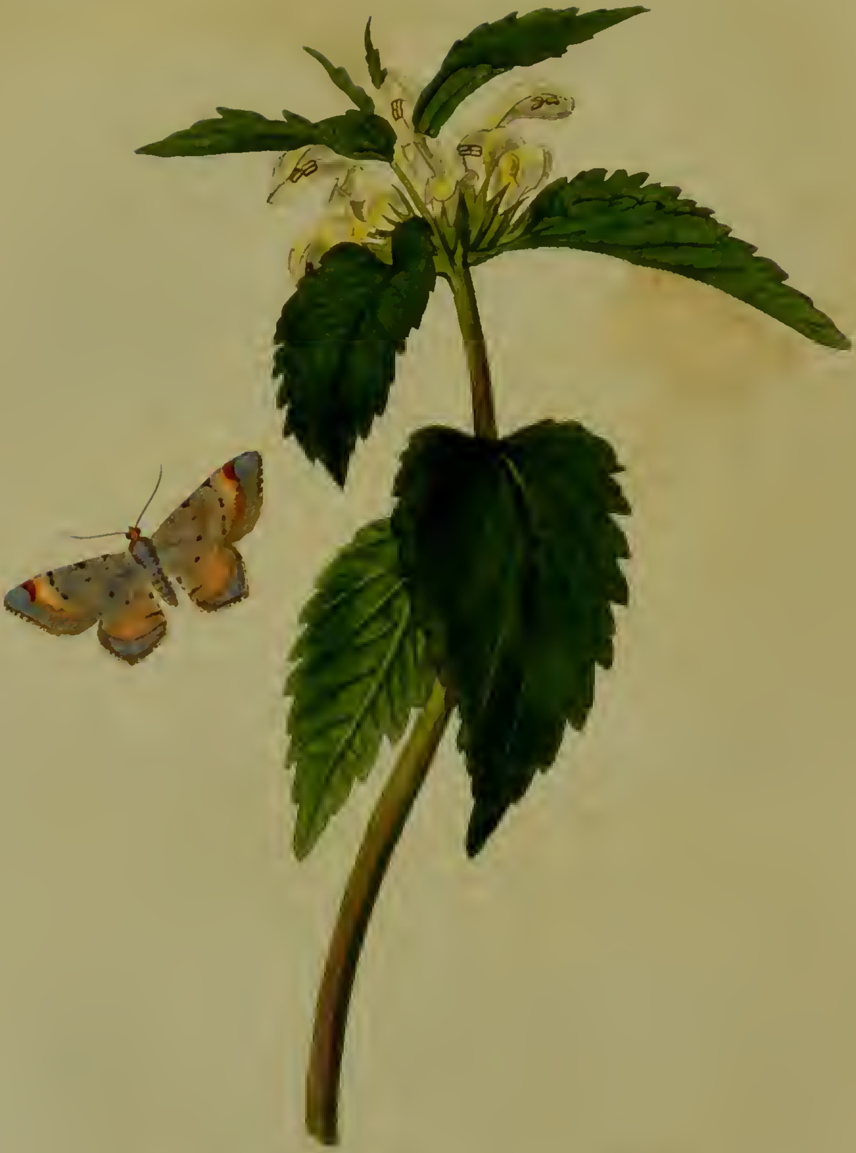
** Body sublinear

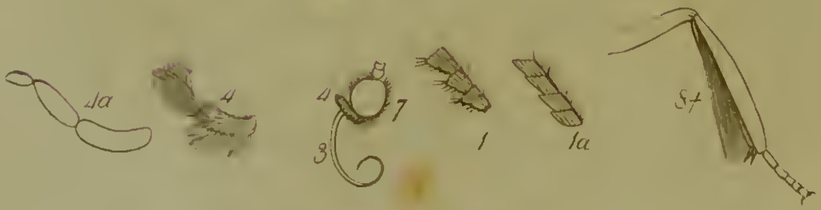
5 flavicornis *Herbst*, *Payk. t.* 8. *f.* 6.—minutus *Panz.* 93. 3.
6 Milleri *Leach's MSS.*
7 picipes *Fab.*, *Payk.* 8. 7. *Sturm*, *tab.* 19. *fig. a.* *Panz.* 43. 6.—pygmæus *Marsh.*

It may be observed that our genus unites *Abræus* and *Platysoma* Leach, being separated from the former by the produced sternum, and from the latter by the convexity of the upper surface of the body. With regard to the trophi, it will be seen on comparing our plate with those of *Hister* in MacLeay's *Horæ Entomologicæ*, Sturm's *Deütschland's Fauna*, and Paykull's *Monographia Histeroidum*, how greatly they differ from the usual forms exhibited by the family.

The local plant figured, *Iris fœtidissima* (Stinking Flag), was gathered by my friend Mr. Charles Fox at Darent, Kent.

132





[illegible] London Sept [illegible]

MACARIA LITURATA.

The Tawny-barred Angle.

ORDER Lepidoptera. FAM. Phalænidæ *Lat.*, *Leach.*

Type of the Genus Phalæna liturata *Linn.*

MACARIA *Nob.*—Phalæna *Linn.*, *Fab.*, *Haw.*—Geometra *Hüb.*

Antennæ inserted between the eyes, near to the back of the head, setaceous, long and slender in both sexes, composed of numerous elongated joints, each being covered above with 2 series of scales, pilose beneath (fig. 1 a, represents 2 joints of the female); in the males they are produced on the internal side, which gives them a serrated appearance (1).

Maxillæ not so long as the antennæ (3).

Labial palpi 2, projecting very little beyond the head, obtuse, covered with scales (4. 4), 3-jointed, basal joint the longest, slightly curved, 2nd large elongate-ovate, 3rd small subovate (4 a).

Head *small.* Eyes *globose* (7). Abdomen *rather short, linear in the males, somewhat conical in the females.* Wings *entire, extended horizontally when at rest; superior slightly falcate, sometimes with the posterior margin indented near the apex; inferior angulated.* Thighs *covered with short scales.* Tibiæ; *anterior scarcely longer than the basal joint of the tarsus, having a small spine on the internal side; middle pair terminated by spurs; posterior more robust in the males than females, with 2 pair of spurs, a suture down the inside, from which can be exserted a long fascicle of hair which does not extend beyond the apex.* Tarsi *5-jointed, posterior short in the male.* Claws *distinct, acute.* Pulvilli *small* (8 † *hind leg of male*).

Larvæ *loopers, with 6 pectoral, 2 abdominal and 2 anal feet.*

LITURATA *Linn. Faun. Suec.* 1273.—*Haw. Lep. Brit. p.* 346. *n.* 92.

Lilac with a rosy tinge, minutely spotted with black. Head, anterior margin of thorax and an obscure fascia on the superior wings, near the posterior margin ochraceous; 3 transverse lines upon the same, the 2nd and 3rd of which are continued across the inferior, fuscous irregularly spotted with black; apex cinereous with a lunar ferruginous spot: inferior wings with a fimbria of lilac colour. Abdomen ochraceous at the margins, with a double row of black spots down the back. Beneath orange spotted with brown; superior wings whitish at the tips, inferior with a fimbria of the same colour.

In the Cabinets of Mr. Dale, Mr. Stephens, and the Author.

It has often occurred to me that the *Phalænidæ* might with great propriety be divided into 2 families, one having the antennæ of the males pectinated, the other with the antennæ simple; the former might be denominated *Geometridæ*, the latter remain as *Phalænidæ*. Of those with pectinated antennæ we have already described the genus *Alcis;* and the present group, which we propose calling *Macaria*, appears to form a parallel to that genus in the division with simple antennæ. Mr. Stephens has formed an admirable genus in his cabinet, which he calls *Ptychopoda*, making *Phalæna dilutata* Haw. the type, including *P. immutata* and *aversata* Linn. and their congeners. *Macaria* will follow those, and contains—

1 M. emarginata *Fab.*—rumigerata *Don.* 14. 493. 2.
2 imitata *nob.*—imitaria *Hüb.*, *Haw.*
3 dimidiata *Haw.*—4-punctata *Don.* 14. 493. 3?
4 prænotata *Haw.*—liturata *Hüb.*
5 notata *Linn.*
6 præatomata *Haw.*
7 liturata *Linn.*—alternaria, lituraria *Hüb.*

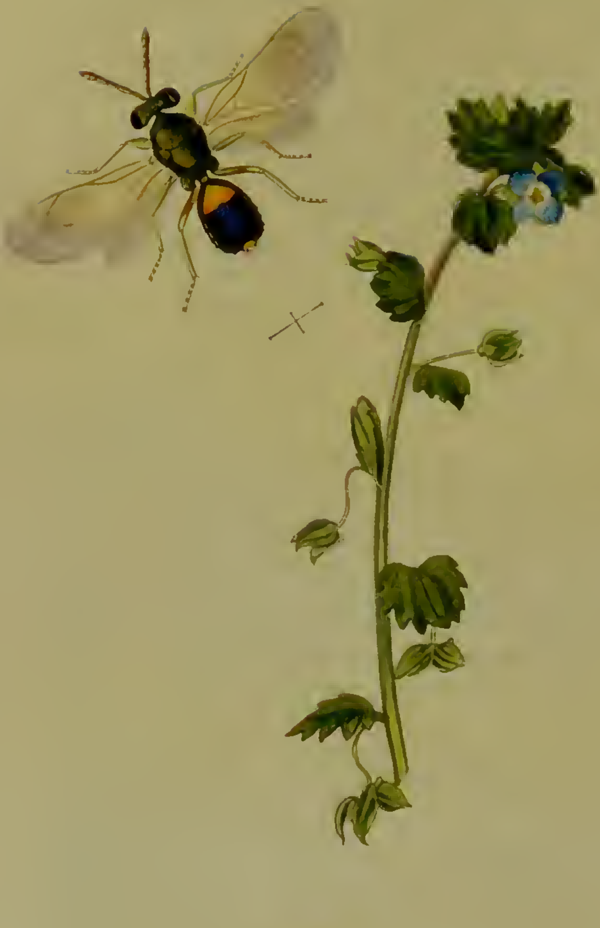
The following species are closely allied, although they want some of the characters.

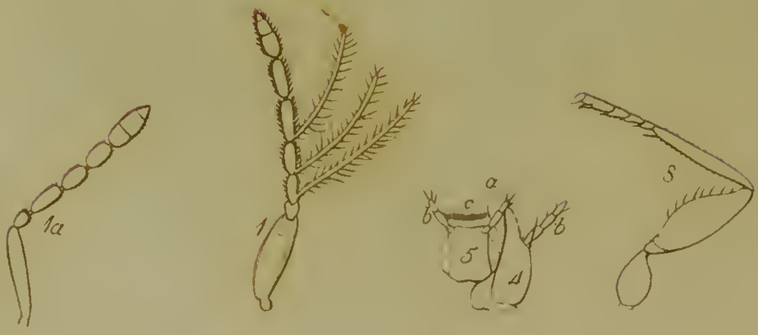
8 M. heparata *Hüb.*, *Haw.*
9 Thymiata *nob.*—Thymiaria *Linn.*—vernaria *Don. Br. Ins.* 9. 310.
10 clathrata *Linn.*
11 maculata *Fab.*—macularia *Linn.*, *Don.* 7. 251. 3.
12 4-maculata *Haw.*, *Ent. Trans. tab.* 6. *f.* 2.
13 bimaculata *Fab.*—Taminaria *Hüb.*
14 punctata *Fab.*—nubeculata *Haw.*—Temeraria *Hüb.*

Macaria liturata lives in the deepest recesses of fir plantations where the sun can scarcely penetrate, resting in the day upon the trunks of the trees. It was first recorded as a British insect by Mr. Haworth in his *Lep. Brit.*, who at that time had seen but one specimen: Mr. Dale has since taken it in plenty in a large and thick grove of Scotch firs at St. Leonards or Barnfield near Ringwood, Hampshire, 24th July 1824; and it has been this year taken by a collector in the same neighbourhood the end of June in a very fine condition.

The plant is *Lamium album* (White Archangel).

133





Pub by J. Curtis London Sept 1 1826

EULOPHUS DAMICORNIS.

ORDER Hymenoptera. FAM. Cynipsidæ *Lat.*, *Leach.*

Type of the Genus Ichneumon pectinicornis *Linn.*

EULOPHUS *Geoff.*, *Oliv.*, *Lat.*, *Kirby.*—Diplolepis *Fab.*—Cleptes *Fab.* —Ichneumon *Linn.*, *De Geer.*

Antennæ inserted between the eyes, below the middle of the face, not longer than the thorax, geniculated, 9-jointed in the male, 1st joint long robust, 2nd minute obovate, 3 following filiform, each having a slender, very pilose branch, arising from the base, 6th filiform, the remainder forming an ovate, acute club of 3 joints (fig. 1); simple and 8-jointed in the female, 3rd joint oblong, 4th and 5th oval, 3 following forming a conical elongated club (1 a).

Labrum very minute ?

Mandibles with 3 or 4 teeth. *Lat.* Gen. Crust.

Maxillæ membranous, dilated below the palpi (4), forming a concave lobe above (4 a). *Palpi* with a few bristles at the apex, 3-jointed (4 b).

Mentum dilated in the middle (5). *Palpi* 3-jointed, terminated by a few bristles (5 b). *Lip* short, ciliated (5 c).

Head *triangular vertical, as broad as the thorax, with* 2 *oblique grooves uniting above to receive the basal joint of the antennæ.* Eyes *lateral.* Ocelli 3 *in a depressed triangle.* Thorax *large ovate, prothorax rounded, metathorax sloped off.* Scutellum *suborbiculate.* Abdomen *subovate, narrowed at the base, depressed, concave above, margins elevated, apex mucronate in the male unarmed in the female.* Wings *large, transparent, pubescent; superior with an abbreviated costal cell, the costal nervure branched towards the middle; inferior small sublanceolate, nerveless.* Coxæ *posterior very large corneous.* Legs *subcoriaceous, simple.* Tibiæ *with a spine at the apex.* Tarsi 4-*jointed, basal and 3rd joints short in the* 4 *posterior, 2nd and 4th longer, terminated by* Pulvilli. Claws *arising behind the apex* (8, *a fore leg*).

DAMICORNIS *Kirby Linn. Trans. v.* 14. *p.* 112.

Male. Antennæ with the 1st and 2nd joints pale yellow, remainder dull ochre. Eyes black. Head and thorax deeply punctured, aureous green. Abdomen smooth, violaceous, black, with an ochraceous spot near the base. Wings iridescent. Coxæ posterior punctured, aureous green. Legs very pale yellow. Pulvilli brown.

Female. Abdomen with the apex and a large spot at the base ochraceous. Wings slightly fuscous in the middle. Thighs, posterior fuscous near the middle.

In the Cabinets of Mr. Kirby and the Author.

Mr. Kirby having but one specimen of the male, the legs of which I could not clearly see, and having kindly given me females which I could relax, I have drawn the latter sex of this pretty and rare insect, which perfectly agrees with the former excepting the simple antennæ, the spot on the posterior thighs, and a slight cloud upon the wings. I could not (from the same cause) satisfy myself perfectly of the club of the antennæ being composed of 3 joints in the male as I did in the female, neither do I feel positive that the branches are not articulated. The extreme minuteness of the mouth prevented me from obtaining the labrum and mandibles, which I was very anxious to accomplish as the *Cynipsidæ* are less complete in their organization than most of the Hymenoptera; their wings are nerveless, and their palpi and tarsi composed of fewer joints than usual.

Mr. Westwood having discovered a new species, the description of which he has obligingly communicated as well as some useful remarks, and having another nondescript in my own cabinet, I shall give a short account of all the species.

1 E. ramicornis *Fab.*, *De Geer*, *Geoff. v.* 2, *p.* 313, *t.* 15, *f.* 3.
Entirely of a beautiful golden green with yellow legs—1⅓ line long.
Bred from pupæ attached to the leaves of lime-trees.
In the cabinets of Mr. Kirby and Mr. Haworth.

2 E. damicornis *Kirby.* described as above.
Bred the beginning of August from larva of *Ptilodontis camelinus?*

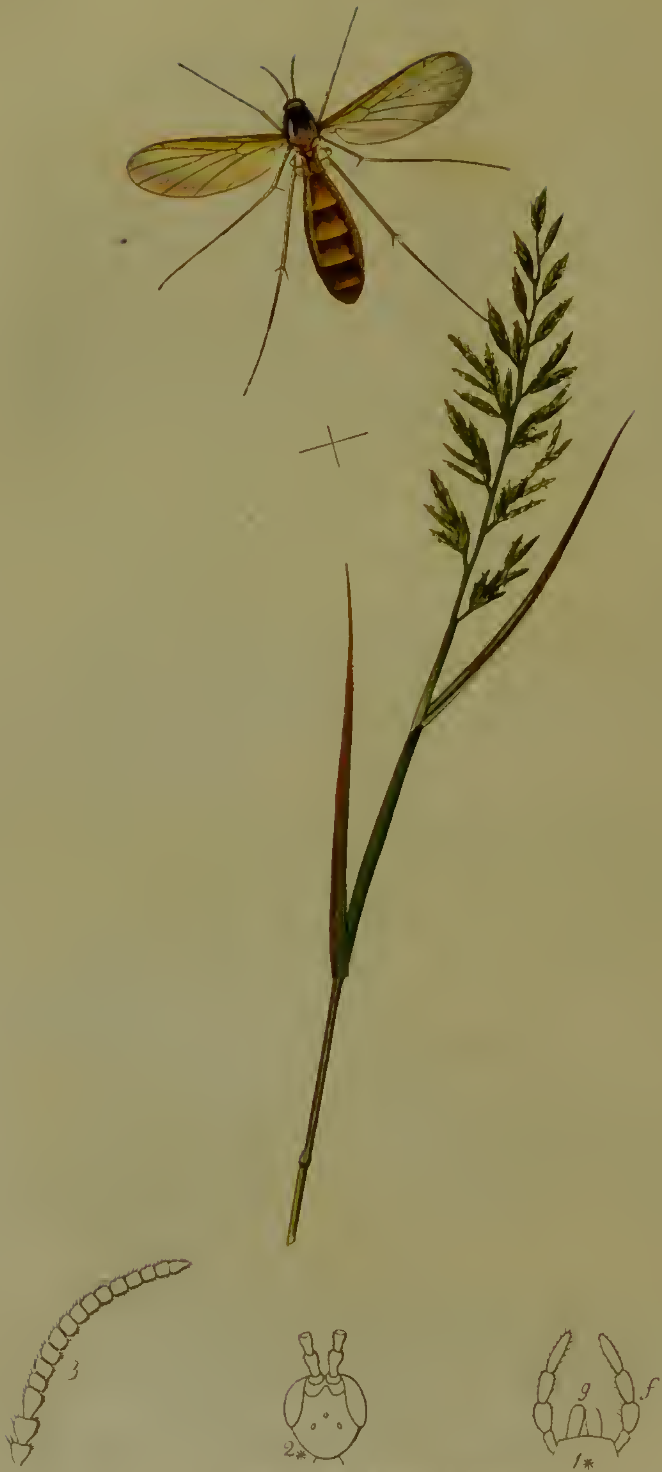
3 E. Latreillii *nob.*
Female. Head, thorax and petiole bright green, abdomen violaceous black, bright green at the base, with a small whitish spot below the base, legs and 2 first joints of antennæ nearly white—¾ line long.
Bred from pupæ of *Tinea Cramerella* Fab.
In the Author's cabinet.

4 E. Kirbii *Westwood's MSS. nob.*
Black with a dull white subpellucid spot at the base of the abdomen—½ line long.
3 males were taken from a hazel-bush in a small wood near Ashford, Kent, August 1825, by Mr. W.
In the cabinets of Mr. Westwood and the Author.

5 E. pectinicornis *Linn.*, *Fab.*, *De Geer*, *v.* 1, *p.* 589, *t.* 35, *f.* 1—7.
Dull black—½ a line long.
Bred 9th Oct. by the Baron De Geer out of *Tinea* pupæ.
Taken by Mr. Westwood from the white-thorn when in blossom, near Wimbledon Common, May 1825.
In the cabinets of Mr. Kirby and Mr. Westwood.

The plant is *Veronica agrestis* (Germander).

131



[illegible]

PLATYURA FLAVIPES.

ORDER Diptera. FAM. Tipulidæ *Lat.*, *Leach.*

Type of the Genus P. flavipes *Meig.*

PLATYURA *Meig.*—Asindulum *Lat.*—Ceroplatus *Fab.*—Rhagio *Fab.* —Sciara *Fab.*

Antennæ alike in both sexes, porrected, longer than the head, inserted between the eyes in large fovea, pilose, 17-jointed, basal joint short, 2nd more robust, cup-shaped, 3rd nearly as long as the 2nd, remainder transverse, terminal joint conical (fig. 3).

Labrum and *Tongue* obscure.

Mandibles and *Maxillæ* none.

Palpi exserted, incurved, longer than the lip, 4-jointed, 1st joint small, 2nd robust, 3rd large, 4th elongate-ovate (1* f).

Lip short, bilobed (g).

Head *small, vertical, obovate.* Eyes *lateral.* Ocelli 3 *in triangle, below the crown of the head, in some the anterior one is the smallest.* (2*, *the head viewed from above with the basal joints of the antennæ.*) Thorax *gibbous.* Scutellum *small, rounded.* Abdomen *large, sometimes depressed, more slender in the males.* Wings *not longer than the abdomen, parallel, incumbent, naked, containing about* 12 *cells, having a transverse nervure near the apex uniting the costal and subcostal nervures.* Halteres *distinct.* Legs *simple, naked, anterior the shortest.* Tibiæ *unarmed on the sides, terminated by spurs.* Tarsi 5*-jointed, basal joint long.* Claws *and* Pulvilli *minute.*

FLAVIPES *Meig. Syst. Besch. v.* 1. *p.* 237. *n.* 9.

Female shining, pubescent. Antennæ fuscous. Head and thorax black, the latter pubescent and inclining to red behind. Scutellum and abdomen fuscous, the posterior margins of the segments ochraceous. Wings short, slightly fuscous with a yellow tinge, very iridescent. Halteres pale fuscous. Legs pale ochraceous; tibiæ inclining to fuscous; tarsi to black.

In the Cabinets of Mr. Stephens and the Author.

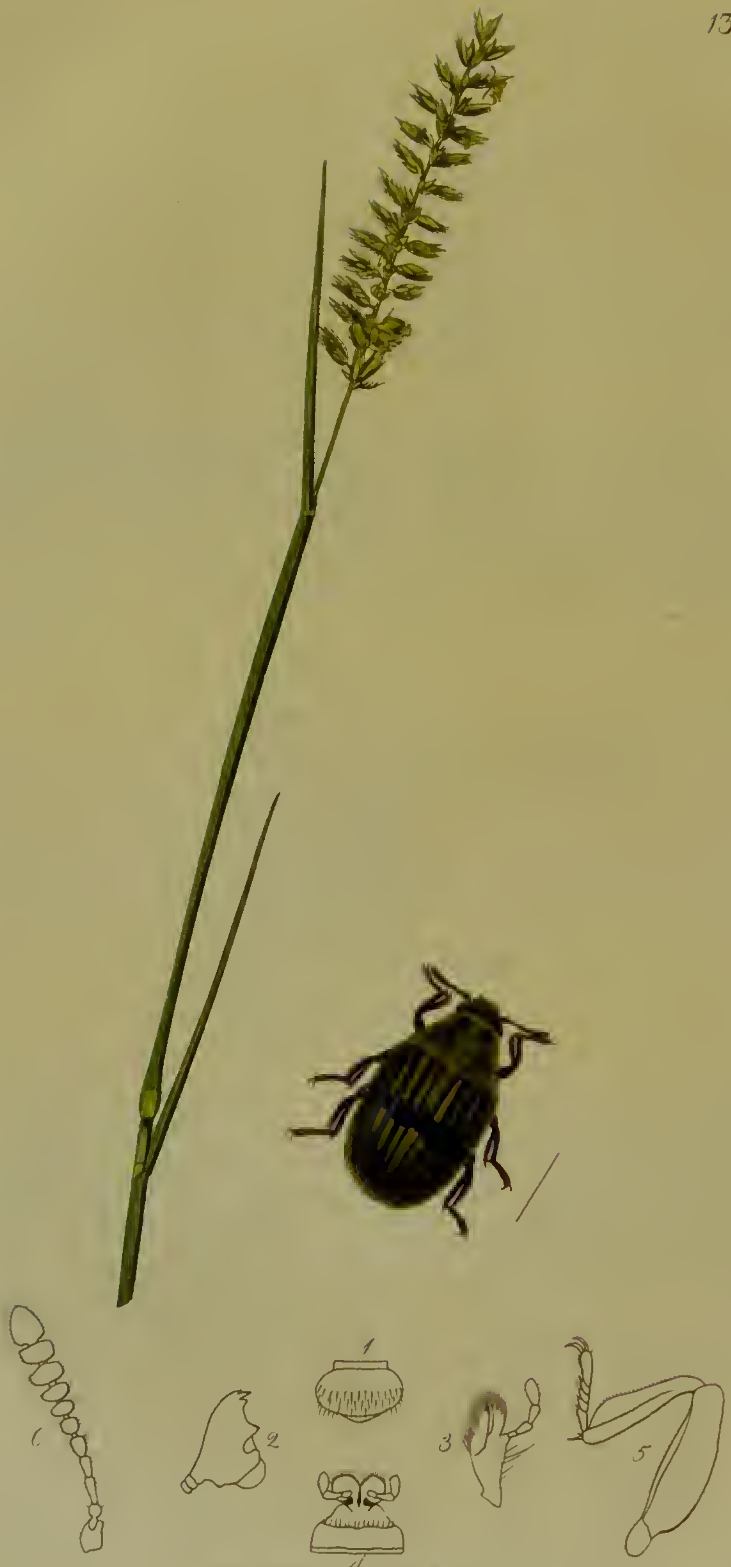
I SHOULD not have relinquished Latreille's generic name *Asindulum* had he not by some accident described (in his *Histoire Naturelle, t.* 14, *p.* 290, and in his *Genera Crustaceorum, &c. t.* 4, *p.* 261) and figured (in the latter work, tab. 15, f. 1.) an insect for the type which appears to be more allied to the *Empidæ*, having an elongated proboscis inflected under the breast, "Proboscis elongata, sub pectore inflexa," &c. which would exclude it from the *Tipulidæ*, none having a long proboscis excepting *Culex* and *Anopheles*, and in them it is porrected.

Platyura is distinguished at once from the neighbouring genera by the transverse nervure at the apex of the wings, and many of them by their depressed abdomens. With their habits and economy we are unacquainted: it is supposed they live upon fungi. The following species are in Mr. Stephens's cabinet.

1 P. atrata *Fab.*
2 lineata *Fab.*
3 laticornis *Meig. pl.* 8. *f.* 19—21.
4 rufipes *Hgg.*
5 semirufa *Meig.*
6 nemoralis *Meig.*
7 flavipes *Meig.*
8 cingulata *Steph. MSS.*
9 ochracea *Meig.*
10 discoloria *Meig.*

Of these there appears to be only one figured. Our species, a female of which is represented, is not uncommon in the neighbourhood of London; I have met with it in Coombe Wood and upon paling near Kilburn, in the early part of June of the present year. Some of the species are much larger, and far more rare.

Poa rigida (Hard Meadow-grass) accompanies the insect.


1
6
2
3
5
4

BYRRHUS DENNII.

ORDER Coleoptera. FAM. Byrrhidæ *Lat.*, *Leach.*

Type of the Genus Byrrhus Pilula *Linn.*

BYRRHUS *Linn.*, *Fab.*, *Oliv.*, *Panz.*, *Sturm.*—Cistela *Geoff.*, *Marsh.*—Dermestes *DeGeer.*

Antennæ straight, not so long as the thorax, inserted before the eyes, near the base of the mandibles, compressed, perfoliate-clavate, 11-jointed, basal joint large, 2nd small globose, 3rd long slender, 4th shorter, 5th turbinate, 6th globose, 4 following transverse-ovate, last large ovate (fig. 6).

Labrum transverse-ovate, pilose, slightly produced in front (1).

Mandibles small, trigonate, one bifid, the other subtrifid at the apex, with a large tooth on the interior side, beneath which is a deep notch and membranous appendage (2).

Maxillæ coriaceous above, thickly ciliated, internal lobe narrow, nearly as long as the external one. *Palpi* a little longer than the maxillæ, 4-jointed, basal joint minute, 2nd and 3rd of nearly equal size, 4th larger (3).

Mentum transverse, horny, slightly emarginate and ciliated. *Lip* membranous dilated at the base, anterior part thick, fleshy, cordate, ciliated. *Palpi* arising from the upper surface of the lip near the centre of each lobe, small, 3-jointed, basal joint minute, 2nd clavate, 3rd subovate (4).

Head *small, sunk in the thorax.* Eyes *small lateral.* Thorax *narrowed before, posterior angles acute.* Scutellum *small.* Elytra *very convex completely covering the abdomen.* Wings 2 *formed for flight.* Legs *received into cavities in the abdomen.* Tibiæ *compressed, spurred, slightly serrated on the external edge, having a groove to receive the* Tarsi *which are 5-jointed, basal and terminal joints the longest, intermediate very short* (5, *a fore leg*).

DENNII *Kirby's MSS.*

Black clothed with subaureous pubescence. Thorax with 2 large round spots before and 2 angulated ones near the middle black. Elytra with a black sinuated fascia across the middle not extending to the exterior margin, each having 4 black longitudinal stripes; margin blackish. Antennæ and legs castaneous, inclining to black. Beneath dull black.

In the Cabinet of Mr. Kirby.

From the dissimilarity of form at first sight of *Byrrhus* and *Hister* we are induced to inquire Latreille's reasons for placing them in the same family, when we shall find that in the structure of the legs as well as in the mode of contracting them, in the situation of the labial palpi and in the number of their joints, there is considerable evidence of relationship: in confirmation we will refer to a comparison of the legs of *Byrrhus* and of *Dendrophilus* (Pl. 131), of the labium &c. (fig. 4) of our Plate, and the same part of *Hister* in the *Horæ Entomologicæ* (fig. 1 F); and in *Anthrenus*, a genus of the same family, we have an approach to the antennæ of *Hister*. Dr. Leach very judiciously formed the *Histeri* into a family, and placed it next the *Byrrhidæ*. Mr. MacLeay in his ingenious and learned work has considered the *Histeridæ* allied to the *Lucanidæ*, which will bring them nearer to the *Scaribæidæ* than we have been accustomed to see them; and the question now is, whether the *Byrrhidæ* are to accompany them.

The following is a list of our British species and their synonyms.

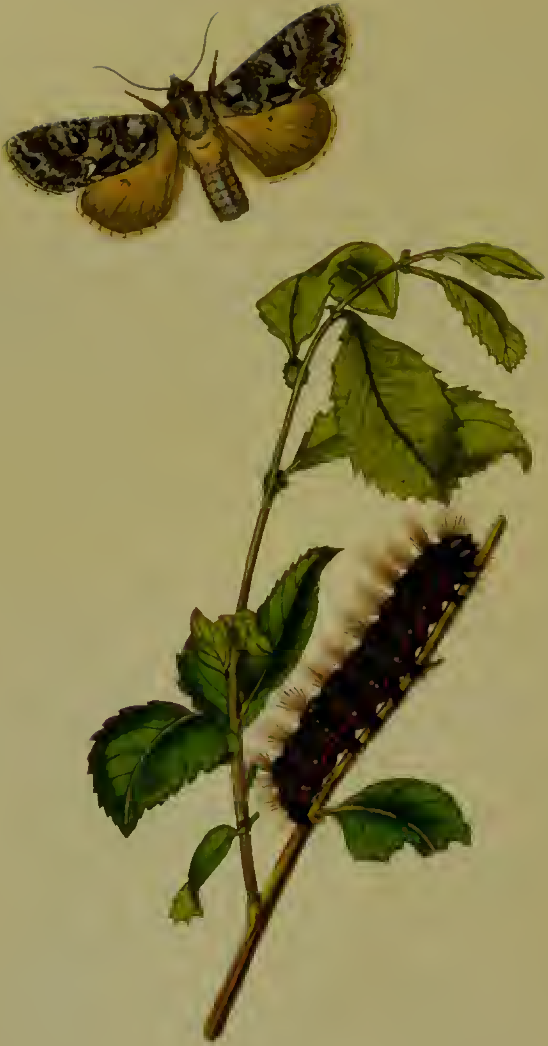
1. B. Dennii *Kirby. Nob.*
2. pilula *Linn.*, *Panz.* 4. 3. *Sturm*, *tab.* 33.—ater *Panz.* 32. 2.
3. fasciatus *Fab.*, *Oliv. tab.* 1. *f.* 2.—ornatus *Panz.*? 24. 1. ferruginea *Marsh.*—undulata *Marsh.*
4. oblongus *Sturm*, *tab* 34, A, a.
5. ater *Marsh. Ent. Brit.*
6. murinus *Fab.*, *Panz.* 25. 1.—undulatus *Panz.* 37. 14.
7. dorsalis *Fab.*, *Panz.* 104, —, fasciatus *Panz.* 32. 1.—morio *Panz.* 37. 15.—bicolor *Marsh.*
8. varius *Fab.*, *Panz.* 32. 3.—sericea *Marsh.*
9. fuscus *Marsh. Ent. Brit.*

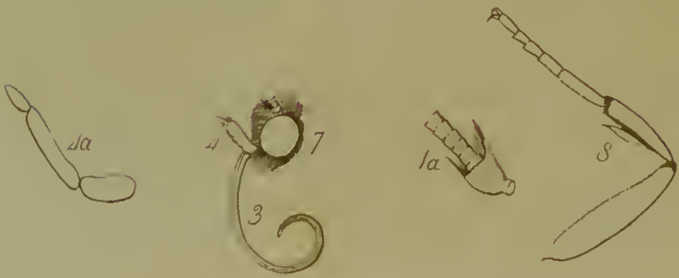
The beautiful species figured was found in a chalk pit in Barham, Suffolk, in the spring of 1821 by Mr. H. Denny, whose monographs upon the British *Pselaphidæ* and *Scydmænidæ*, with coloured figures, entitle him to the honour which his patron has conferred upon him by calling this insect by his name.

The *Byrrhi* are found in sandy situations, gravel pits, at the base of walls, and the roots of trees, amongst short grass in pathways, &c. from March to July.

The plant is *Cynosurus cristatus* (Crested Dog's-tail Grass.)

136





ACRONYCTA SALICIS.

The Sallow Noctua.

Order Lepidoptera. Fam. Noctuadæ *Lat.*, *Leach.*

Type of the Genus Noctua Leporina *Linn.*

Acronycta *Och.*—Apatalæ *Hüb.*—Noctua *Linn.*, *Fab.*, *Lat.*, *Haw.*

Antennæ inserted on the crown of the head, close to the eyes, alike in both sexes, long, setaceous, composed of numerous joints covered with scales above, basal joint tufted with scales, forming a cup for the insertion of the 2nd (fig. 1 a).

Maxillæ as long as the antennæ, with tentacula towards the apex (3).

Labial palpi porrected obliquely, completely clothed with rather short scales, the terminal joint being very distinct (4); 3-jointed, basal joint robust, 2nd long linear, 3rd short ovate (4 a).

Head *subtrigonate.* Thorax *subquadrate, clothed with rather long and large scales.* Abdomen *large robust, angulated, obtuse, and having a margin of scales in the males; cylindric conic in the females.* Wings *deflexed when at rest; superior rather elongate lanceolate; inferior rather small.* Legs; *anterior the shortest.* Tibiæ; *anterior, much shorter than the tarsus, with a twisted, subulated spine on the internal side, the others spurred at the apex, the posterior having a pair above on the side.* Tarsi *5-jointed, basal joint the longest.* Claws *simple.* Pulvilli *distinct* (8, *a fore leg*). Larvæ *various, with* 6 *pectoral,* 8 *abdominal and* 2 *anal feet.*

Obs. *The dissections are made from Noctua megacephala* Fab.

Salicis *Nobis.*

Pale cinereous, clouded with brownish cinereous. Superior wings with a pale indented, abbreviated spot, near the base and another in the middle, a small black ring towards the middle and a large reniform one dark in the centre, beyond the middle; costa spotted with black, posterior margin with a row of black spots parallel to which runs a sinuated, indented whitish line, and nearer the middle, 2 indented sinuated black lines, the space between them forming 2 white lunular spots at the interior margin; a spot near the base and another subquadrate one nearer the middle approaching the interior margin black. Abdomen and inferior wings dull ochraceous, the former with an obscure black line near the base, the latter with a nearly obsolete spot towards the middle and a fuscous fimbria.

In the Author's and other Cabinets.

The species represented in the plate (rather larger than life) varies considerably: some specimens are much darker and brighter than others, and the underwings of one of our males are fuscous not ochraceous. This insect, which so much resembles *A. Rumicis* that it is difficult to detect any difference in them, has for many years stood in our cabinets as the *A. Euphorbiæ* of Fab. and Hüb.; but upon referring to the figure of the latter and Ochsenheimer's description, it is clearly not the same species. It would not now have been recorded as distinct, had not Mr. Dale and myself found a considerable number of caterpillars the 10th August last year in the Trossacks, none of which varied from the drawing; and being very distinct from that of *A. Rumicis* in form and markings, we feel no hesitation in giving it as an unnoticed species. The specific name has been assigned to it from its feeding upon a little Sallow that grew, together with *Myrica Gale*, which it would also eat, in a humid spot at the base of Ben Chochan.

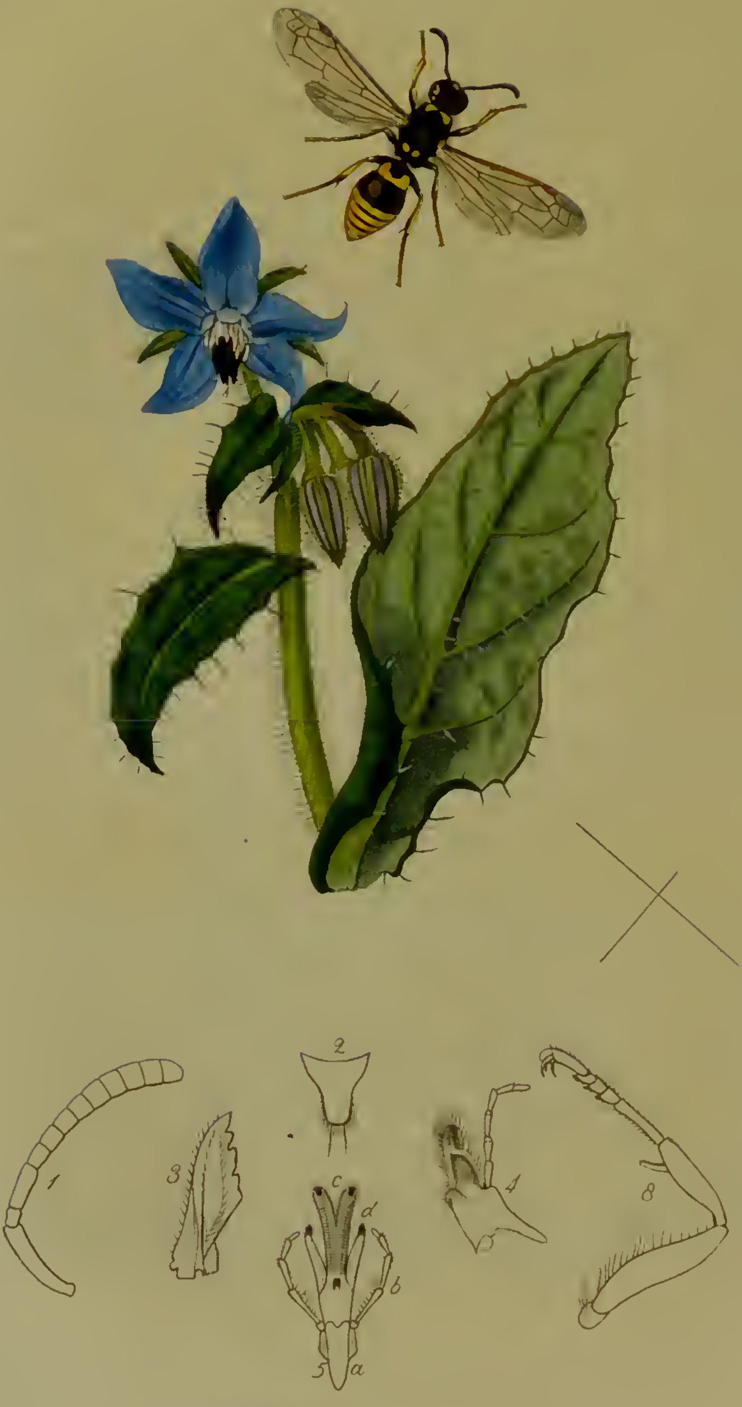
It is a curious fact that in the present genus the larvæ are of more value in separating than in uniting the species; showing how cautious we must be in adopting exclusively any system. It is this that has led those who follow the views of the *Wiener Verzeichniss* implicitly, to fall into many errors: there is not perhaps a more natural genus than *Acronycta* of Ochsenheimer if we look at the perfect insects; yet when we refer to the larvæ we shall not find more than 2 that have any affinity beyond the number of their feet.

The following are our British species:

1 A. Leporina *L.*, *Don. Brit. Ins.* 10. 327. 1.
2 Bradyporina *Och.*, *Hüb. tab.* 4. *f.* 16.
3 Psi *L.*, *Don. Brit. Ins.* 4. 133.
4 tridens *F.*, *Hüb. tab.* 1. *f.* 5.
5 Menyanthidis *Hüb. tab.* 2. *f.* 6 & 7.
6 auricoma *F.*, *Hüb. tab.* 2. *f.* 8.
7 similis *Haw. Lep. Brit.* 180. 57.
8 Rumicis *L.*, *Don. Brit. Ins.* 4. 126.
9 Salicis *Nob.*
10 aceris *L.*, *Don. Brit. Ins.* 10. 330.
11 megacephala *F.*, *Hüb. t.* 2. *f.* 10. *t.* 3. *f.* 11.
12 Alni *L.*, *Don. Br. Ins.* 10. 327. 2.
13 Ligustri *F.*, *Hüb. tab.* 5, *f.* 21.

The larvæ, when they change to pupæ, spin themselves a web, either upon or amongst the leaves upon which they fed.

A piece of *Salix* is figured with the insects.



J. Curtis. Lond. del. & Sculp.

ODYNERUS PARIETINUS.

ORDER Hymenoptera. FAM. Vespidæ *Lat.*, *Leach.*

Type of the Genus Vespa parietinus *Linn.*

ODYNERUS *Lat.*, *Leach.*—Vespa *Linn.*, *Fab.*, *Panz.*

Antennæ inserted in the centre of the face, approximating, slightly geniculated, subclavate, 13-jointed in the male, the 2 last joints forming a small claw; 12-jointed in the female, 1st joint long, 2nd small, 3rd not so long as the first, the remainder short, terminal joint ovate (fig. 1, antenna of female).

Labrum dilated at the base, where it is concealed by the clypeus, narrow and elongated towards the apex which is ciliated (2).

Mandibles when at rest forming a beak, elongated, acute, slightly bent, having 5 blunt teeth on the internal margin (3).

Maxillæ corneous below the palpi, coriaceous above, membranous at the margins, terminal lobe elongated hairy, somewhat articulated near the apex, internal lobe small hairy. *Palpi* longer than the maxillæ, 6-jointed, the 2 first the most robust, the 3 first of equal length rather longer than the others, terminal joint ovate (4).

Mentum corneous, elongate, emarginate, (5 a) : *Palpi* shorter than the lip, slender, 4-jointed, 2 first long clavate, 3rd short, 4th small ovate (b) : *Lip* coriaceous, striated transversely, elongated, dilated, and bilobed at the apex, each lobe terminated by a gland (c) : *Paraglossæ* shorter than the lip, glandular at the apex (d),

Head *orbicular.* Clypeus *convex, cordiform, emarginate at the apex.* Eyes *deeply emarginate.* Ocelli 3, *in triangle.* Thorax *ovate quadrate.* Scutellum *rounded.* Abdomen *ovoid-conic, peduncle very short, basal joint somewhat contracted, bell-shaped, 2nd large.* Wings; *superior folded when at rest, with* 1 *marginal and* 3 *perfect submarginal cells.* Tibiæ *spurred.* Tarsi 5*-jointed, basal joint long,* 4*th very short, cleft.* Claws *bifid.* Pulvilli *distinct* (8, *a fore leg*). Females *and* Neuters *armed with stings.* Larvæ *omnivorous.*

PARIETINUS *Linn. Faun. Suec. p.* 418, *n.* 1679.

Female. Black, punctured, pubescent. Antennæ, basal joint beneath yellow, the remainder orange; a spot at the base of each mandible, 2 small spots at the apex, and 2 lunular at the base of the clypeus, one between the antennæ and a very minute one behind each eye, yellow. Thorax with a bilobed yellow spot on the anterior margin, a small one beneath each wing and 2 larger upon the scutellum of the same colour. Wings slightly fuscous, stigma ferruginous. Abdomen shining, sparingly punctured, basal joint yellow at the posterior margin, leaving a triangular black space in the centre, 4 following joints with a broad yellow margin, terminal joint with a large yellow spot in the middle. Thighs yellow at the apex. Tibiæ yellow, ferruginous at the apex, anterior with a black stripe on the outside, the others on the inside, next the apex. Tarsi ferruginous, inclining to fuscous.

In the Author's and other Cabinets.

Some wasps, like the bees, live in society, constructing nests composed of cells, but formed of very different materials. The *Odyneri* on the contrary do not unite to form a nest to live in, whence they are called Solitary Wasps: their economy, however, is exceedingly curious, and they exhibit a degree of instinct which can scarcely be surpassed. Their eggs are deposited in cells made in old walls or sandy banks, about which the species may be found in June, as well as upon flowers.

My friend Mr. Charles Fox detected upon the top of a book, across which another was laid, some cells of a somewhat triangular form, covered externally with mud and formed of a silky substance within: he very obligingly transmitted the book to me last winter, and in the spring nearly 20 specimens of the insect figured made their appearance; they were all females, and did not vary in the least. I have no doubt of their being the *Vespa parietinus* of Linnæus's *Faun. Suec.* of which there is no figure that I am acquainted with, Panzer's *V. parietina* being the *V. muraria* Linn. It is very easily distinguished from our other species by the unclouded wings and the entire orange underside of the antennæ.

The following species are in the Author's cabinet.

1 O. spinipes *L.*, *Panz.* 17. 18.
2 pictus *Nob.*
3 murarius *L.*—parietina *Panz.* 49. 24.
4 Scoticus *Nob.*
5 Antilope *Panz.* 53. 9.
6 parietus *L.*, *Schæff. Icon.* 24. 3?
7 similis *Nob.*—quadratus *Don. Brit. Ins.* 14. 495. 2.
8 nigricornis *Nob.*
9 parietinus *Linn. Faun. Suec.* 1679.
10 quadratus *Panz.* 63. 3.
11 angulatus *Don.* 14. 495. 1. 1.
12 flavipes *Nob.*
13 6-fasciatus? *Fab.*
14 4-fasciatus? *Fab.*
15 emarginatus *Fab.*
16 bidens *Linn. S. N.* 2. 951. 16.
17 connexus *Nob.*

O. *pictus* has a very shining abdomen.

O. *Scoticus* has rufous tibiæ and tarsi.

O. *similis* may be only a variety of O. *parietus*.

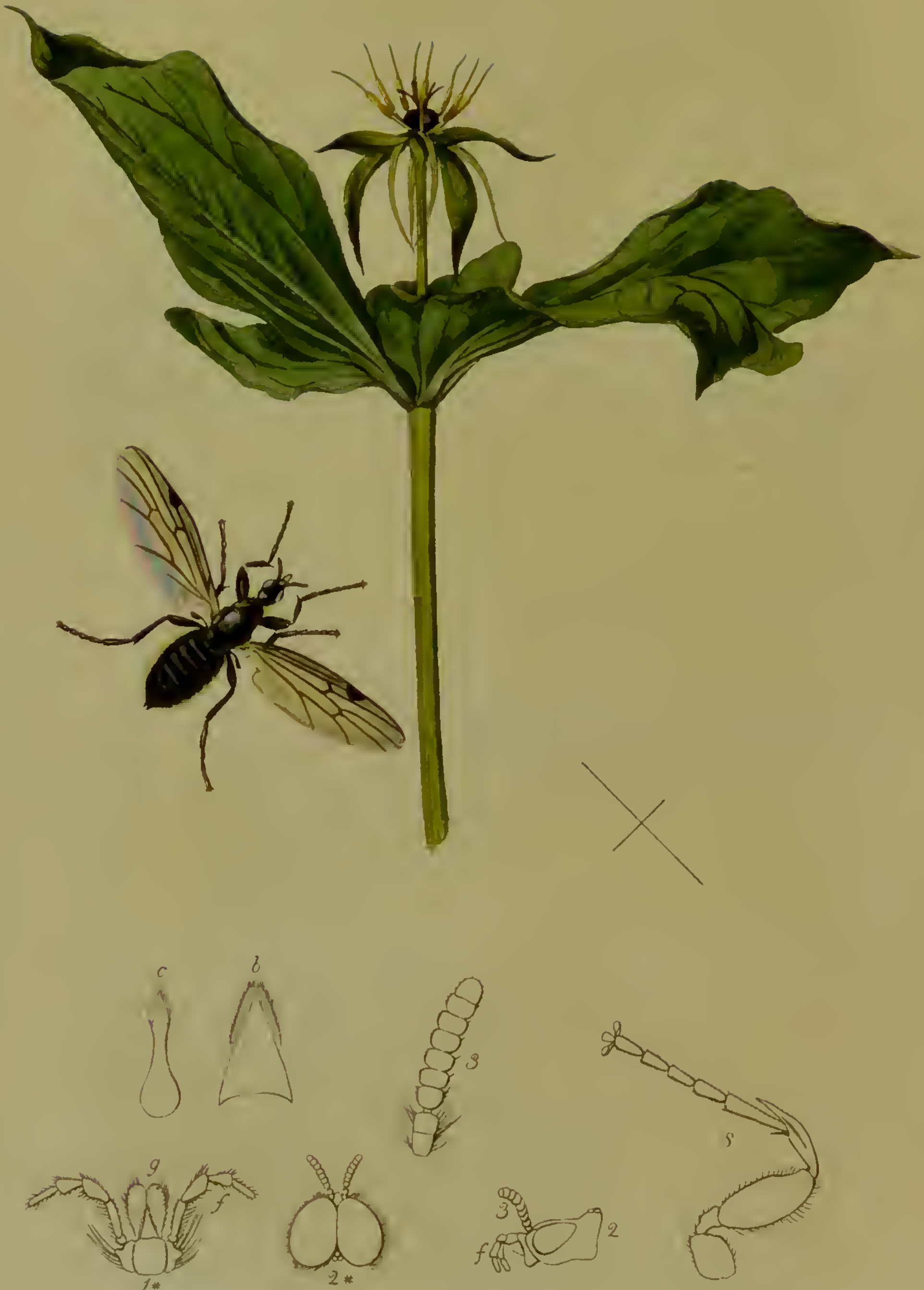
O. *nigricornis* has the apex of the abdomen and antennæ, except at the base, black.

O. *flavipes* may be only the male of No. 10.

O. *connexus* is like No. 16, but has an entirely black thorax. The campanulate and narrow basal joint of these 2 species approaches the form of *Eumenes*.

Borago officinalis (Common Borage) accompanies the insect.

135



BIBIO VENOSUS.

ORDER Diptera. FAM. Tipulidæ *Lat.*, *Leach.*

Type of the Genus Tipula hortulana *Linn.*

BIBIO *Geoff.*, *Oliv.*, *Lat.*, *Meig.*—Hirtea *Fab.*, *Meig.*, *Panz.*—Tipula *Linn.*

Antennæ porrected, not very remote, inserted a little before the eyes, nearly alike in both sexes, submoniliform, 9-jointed, 2 first joints pilose, forming a scape for the remainder, which are transverse, terminal joint rounded (fig. 3).

Labrum short, triangular, membranous and pubescent at the apex (b).

Tongue as long as the labrum, dilated at the base, lanceolate, membranous at the apex and pubescent (c).

Mandibles and *Maxillæ* none.

Palpi 2, exserted, incurved, pilose, 5-jointed, basal joint minute, 2nd long linear, 3rd robust clavate, 4th smaller clavate, 5th slender, elongate ovate (1 * f).

Lip shorter than the head, membranous, very hairy bilobed (g).

Male. Head *large.* Eyes *contiguous.* Ocelli 3 *contiguous* (2 *).—Female. Head *small, ovate.* Eyes *remote, lateral.* Ocelli 3 *contiguous* (2). Thorax *globose.* Scutellum *small.* Abdomen *of the males elongate linear, emarginate at the apex, of the females ovate, frequently elevated down the back.* Wings *incumbent, with about* 12 *cells some of which are imperfect, nervures more distinct in the females than in the males.* Halteres *distinct.* Legs *alike in both sexes, hinder the longest, the thighs being very long and subclavate: anterior the most robust, the thighs incrassated.* Tibiæ *short, mucronated.* Tarsi 5*-jointed, basal joint the longest.* Claws *distinct.* Pulvilli *trilobed* (8, *a fore leg*).

Obs. *The dissections are from a male, excepting fig.* 2, *the head of a female in profile.*

VENOSUS *Meig. Syst. Besch. v.* 1. *p.* 315. *n.* 10.

Male. Black, shining, covered with short pale yellow pubescence. Eyes and line dividing the collar and dorsolum ochraceous, the former black in the middle. Wings hyaline iridescent. Stigma, costal and subcostal nervures piceous, the others fuscous.

Female. Eyes cinereous. Wings stained yellowish fuscous, darkest round the nervures and posterior margin. Nervures darker than in the male.

In the Cabinets of Mr. Stephens and the Author.

Bibio may be distinguished from *Dilophus* Meig., which it most resembles, by the mucronated anterior tibiæ and by its 9-jointed antennæ, the nervures of the wings are also different.

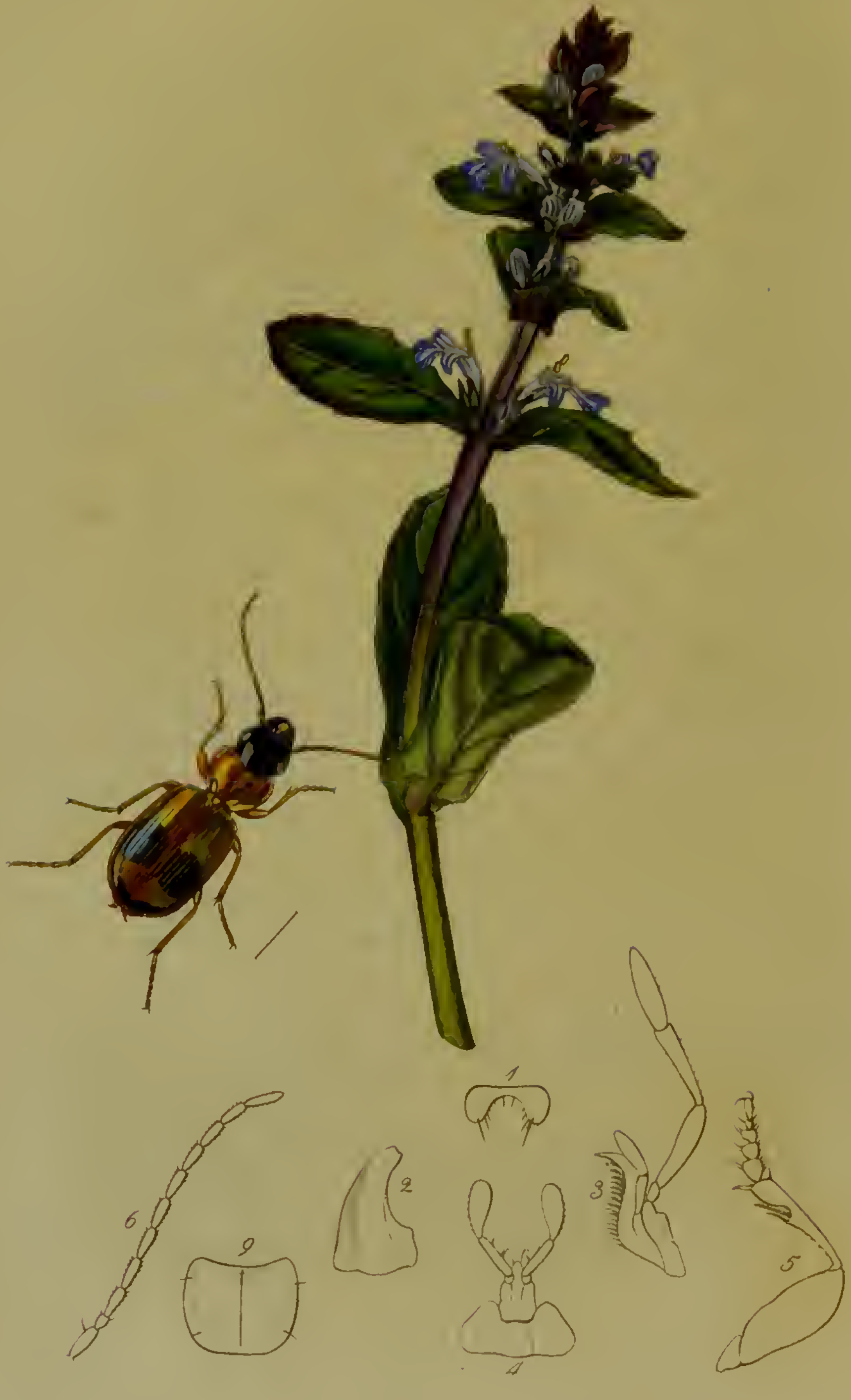
The large heads and transparent wings of the males give them an appearance so dissimilar to the females, which are in one instance of a totally different colour, that no one would at first believe them to belong to the same genus. During May the flowers in the fields and meadows round London swarm with the *B. hortulanus*, and about the same period our streets are frequently visited by the large, heavy and sombre-coloured *Bibio Marci*, figures of which with its larva and pupa are given by Reaumur, tom. 5. pl. 7.

We find in our cabinets the following species; and there may be 2 or 3 more unnamed.

1 B. Pomonæ *F.*, *Don. Br. Ins.* 9. 300.
2 Marci *L.*, *Reaum.*, *Panz.* 95. 20.—brevicornis *Linn.*, *Fab.*, *mas.*
3 hortulanus *L.*, *Schæff. pl.* 104. *f.* 8—11.
4 Johannis *L.*, *De G.* 6. *tab.* 27. *f.* 12-20.—Pyri *Fab. Ent. Syst.*—præcox *Fab. Syst. Ant.*
5 vernalis *Meig.*
6 nigripes *Meig.*
7 venosus *Meig.*
8 ferruginatus *L.*, *De G.* 6. 160. 35.
9 lanigerus? *Hgg.*, *Meig.*
10 clavipes *Meig.*—Johannis *Fab.*
11 dorsalis? *Meg.*, *Meig.*

The beautiful female figured I took at Birch Wood, Kent, in the early part of May a few years since, and Mr. Stephens has 2 males in his cabinet.

For specimens of the plant *Paris quadrifolia* (Herb Paris) I am indebted to Professor Henslow and Mr. George Charlwood, who found it at Harefield, Middlesex.


8
1
2
3
4
5
6
9

[illegible]

139.

BADISTER CEPHALOTES.

ORDER Coleoptera.   FAM. Carabidæ *Lat.*, *Leach.*

Type of the Genus Carabus bipustulatus *Fab.*

BADISTER *Clairv.*, *Lat.*, *Panz.*, *Bonel.*, *Leach*, *Sturm*, *Dej.*—Amblychus *Gyll.*—Carabus *Fab.*, *Marsh.*

Antennæ inserted before the eyes, at the base of the mandibles, filiform 11-jointed, basal joint slightly robust, naked, 2nd minute, the remainder pubescent nearly of equal length except the last which is longer and ovate (fig. 6).

Labrum transverse bilobed, being deeply emarginate, with a few very long bristles at the apex (1).

Mandibles robust, bent, obtuse, emarginate at the apex, dilated at the base (2), one with a tooth on the internal edge.

Maxillæ small, bent, acute, strongly ciliated on the internal margin. *Palpi* 2, internal not extending beyond the apex of the maxilla, compressed, 2-jointed, terminal joint conical; external very long, 4-jointed, 1st joint small, 2nd long robust, 3rd clavate, 4th robust elongate conic (3).

Mentum transverse bilobed, lobes small. *Palpi* long, arising from scapes, 3-jointed, basal joint small, 2nd long with two bristles on the internal side, 3rd long robust, sub-obovate, pilose. *Lip* extending beyond the 1st joint of the palpi, bilobed and produced in the centre (4).

Head *ovate.* Eyes *small, lateral.* Neck *none.* Thorax *quadrate* (9), *or subcordate, angles rounded, anterior margin concave, posterior straight, with two foveæ at the base.* Body *depressed.* Scutellum *triangular.* Elytra *not sinuated at their extremity.* Wings *two.* Tibiæ, *anterior emarginate, spined.* Tarsi 5-*jointed, anterior with the three first joints dilated in the males* (5, *fore leg of a male*).

CEPHALOTES *Dej. Spec. Coleop. t.* 2, *p.* 406, *n.* 1.—Megacephalus *Kirby's MSS.*

Smooth, shining, rufous ochre. Head large, nearly as broad as the thorax, black; trophi ochraceous, antennæ of the same colour, the 2nd and two or three following joints piceous. Thorax rather broader than the head, short, narrowed behind, with a channel down the centre and a fovea near each posterior angle. Elytra with a slight cyaneous gloss and eight striæ on each elytron, that next the suture being divided at its origin, the 3rd and 4th, 5th and 6th being united at their termination, posterior portion black, the suture, external margin, and a sublunular spot towards the apex, extending nearly across, the same colour as the anterior part.

In the Cabinets of Mr. Kirby and the Author.

THE dissections were made from a male of *B. bipustulatus* Fab., which it is necessary to mention because they do not quite agree with those of Sturm in his pretty *Deutschlands Fauna*, pl. 75, which he represents to be taken from the same species as our own; but from the form of the thorax at fig. A, it does not appear to be the insect which in this country is considered to be the Fabrician species: the trophi in the above plate approach much nearer to those of *Licinus* than our dissections do, in which the bilobed labrum, the differently formed mentum, the terminal joint of the labial as well as the maxillary palpi at once afford strong and distinctive characters. *Badister* may also be distinguished from *Licinus* by the rounded apex of the elytra, and the males are known by the three dilated joints of the anterior tarsi.

All the species hitherto noticed are European, and described in a beautiful work entitled "*Species général des Coléoptères de la collection de M. le Comte Dejean* :"—of these at present we can find but two preserved in the cabinets of this country.

Badister bipustulatus *Fab. Ent. Syst. t.* 1, *pars* 1, *p.* 161, *n.* 164.—*Don. Brit. Ins. v.* 15, *pl.* 516.—*Panz. Faun. Germ.* 16. 3.

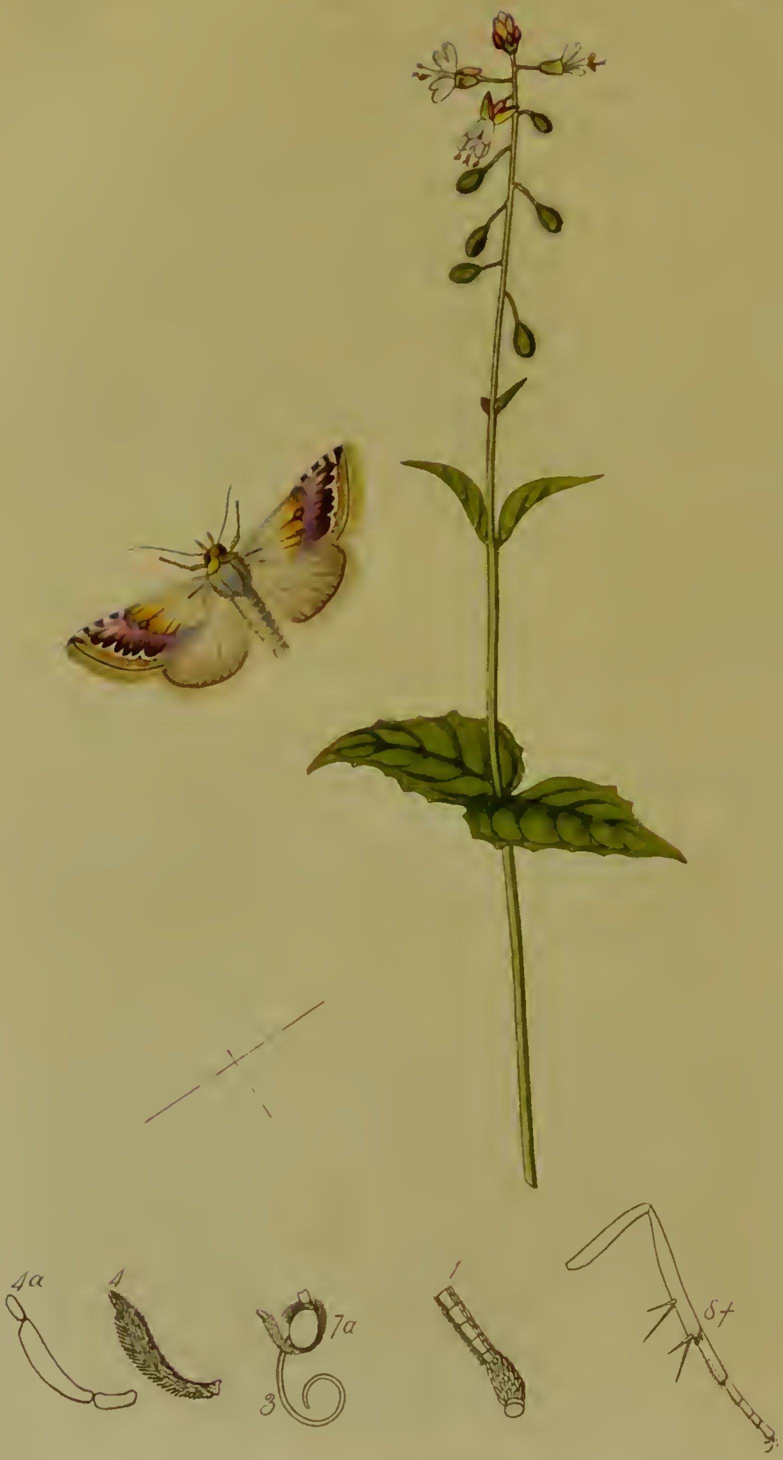
Found under stones from April to October, and is not uncommon.—Its thorax is represented at fig. 9, the better to enable the student to distinguish it from the following.

Badister cephalotes.

A very rare insect in this country, which has never before been figured. Mr. Kirby's specimen was taken by himself 14 or 15 years ago at Wittersham in Kent, and obligingly communicated with the MS. name of "megacephalus," which we should have adopted had it not been described in the work before cited. Our specimen was taken at Darent in the same county. This species is readily distinguished from the others by its large head, the lunular spot near the apex of the elytra, and the shape of the thorax.

The plant is *Ajuga reptans* (Common Bugle).

140



Pub:by J. Curtis [illegible]

ERASTRIA OSTRINA.

Order Lepidoptera. Fam. Noctuadæ *Leach., Lat.*

Type of the Genus Phalæna Tortrix uncana *Linn.*

Erastria *Och.*—Erotyla *Hüb.*—Phytometra *Haw.*—Phalæna Tortrix, Geometra *Linn.*—Pyralis *Linn., Fab.*

Antennæ alike in both sexes, inserted close to the eyes on the crown of the head, rather short, setaceous, composed of numerous quadrate joints, covered with scales above, and hair beneath, basal joint elongate robust (fig. 1).

Maxillæ nearly or quite as long as the antennæ, furnished with glands towards the apex (3).

Labial palpi porrected obliquely beyond the head (7 a), remote, rather slender covered with scales (4), slightly curved, 3-jointed, 2nd joint long subclavate, 3rd smaller than the 1st, ovate (4 a).

Head *short, covered with depressed scales.* Ocelli *two, behind the antennæ* (7 a, *the head in profile*). Thorax *not crested, covered with short scales.* Abdomen *slightly tufted at the apex.* Wings, *nearly horizontal when at rest, forming a triangle.* Tibiæ, *anterior with a small spine on the internal side, middle and posterior pairs armed at the apex and the latter towards the middle also with spines of unequal length.* Tarsi *rather robust 5-jointed, basal joint the longest.* Claws *simple.* Pulvilli *distinct* (8 †, *a hind leg*).

Caterpillars *half-loopers, with six pectoral, two abdominal and two anal feet.* Hüb.

Ostrina *Hüb. Noct. Genuinæ, f.* 399.

Pale ochraceous. Thorax with the centre and lateral scales cinereous, margined with ochre. Abdomen whitish cinereous. Superior wings slightly cinereous towards the base with a ferruginous lateral line, a dull irregular orange space extending across the centre, with a little obscure circle upon it, next to which is a lilac and brown fascia with blackish nervures, white and rosy towards the costa upon which are four white spots; this fascia is bounded next the posterior margin by a sinuated white line dentated internally. Cilia very long, pale at the base. Posterior wings whitish, tinged with ochre, fuscous towards the margin.

In the Author's Cabinet.

This genus contains the smallest insects of the family, many of them not being larger than some of the *Tortricidæ:* it is closely allied to *Acontia* of Ochsenheimer, but the palpi are shorter, the larvæ are represented by Hübner with only two abdominal feet, a very remarkable character which at present is only known to occur in one other genus of *Noctuadæ*, viz. *Plusia* of the same author.

The following species are British and have been described by Mr. Haworth, with the exception of the 3rd, in his *Lepidoptera Britannica.*

1 Erastria sulphurea *Linn.—Don. Brit. Ins.* 10. 339. 1.—lugubris *Fab.*—Very rare, found in clover fields &c. from the end of June to the middle of July.

2 argentula *Esp.*—Bankiana *Fab.*—Olivea *Hüb.*—Taken the end of June amongst reeds and rushes in bogs in Norfolk by Mr. Haworth.

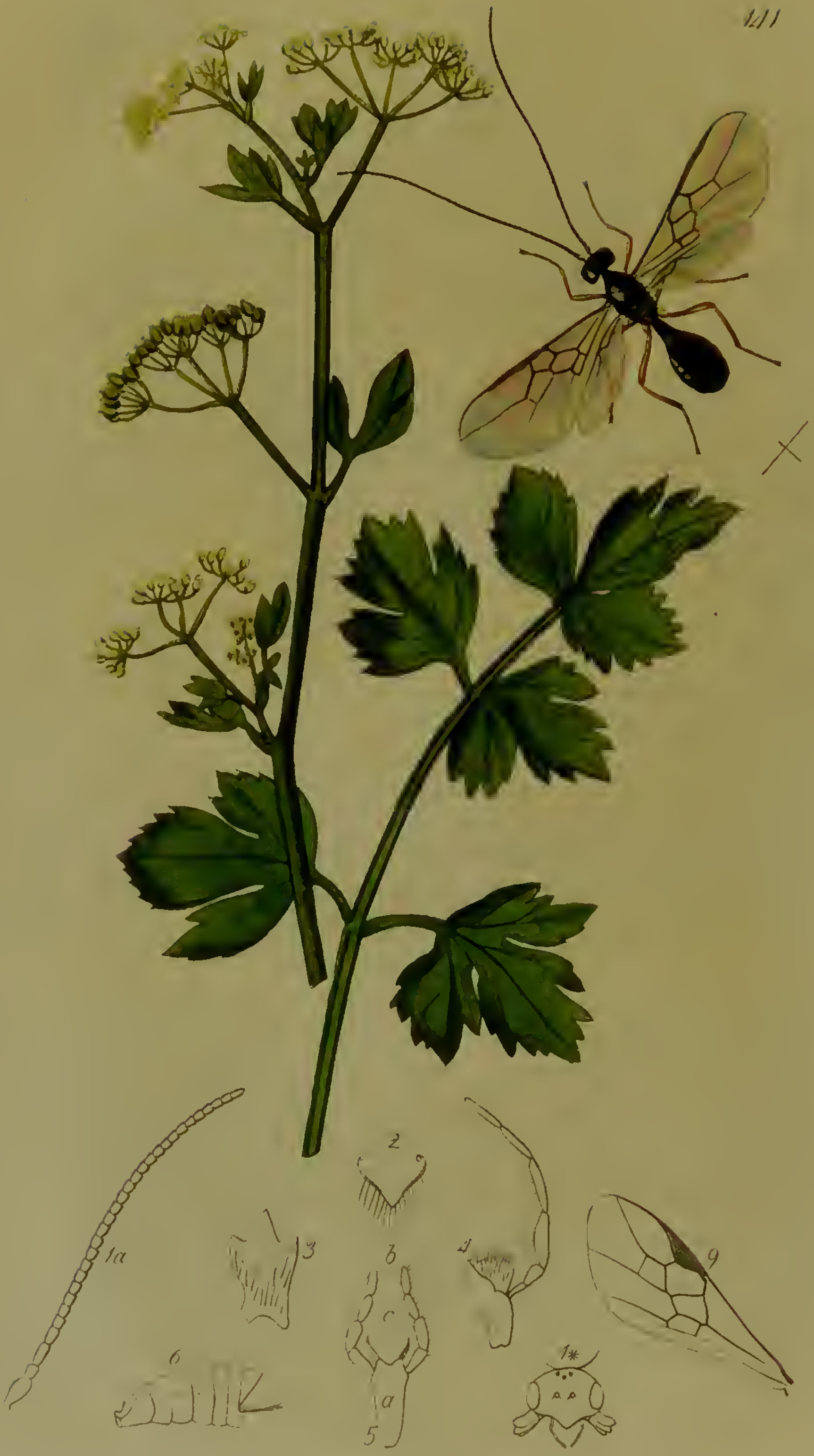
3 ostrina *Hüb.*—This beautiful and unique British insect was taken June 1825 in a dry lane at Bideford, Devon, by Capt. Charles Blomer, and very handsomely presented by him to the author.

4 unca *Linn.—Panz. Faun. Germ.* 7, 18.—Taken in June, Aug. and Sept. in marshy situations at Horning in Norfolk, Whittlesea Meer Huntingdonshire, and the New Forest Hants.

5 venustula *Hüb.*—In the cabinet of Mr. Haworth, from the late Mr. Honey.

It is not a little singular that specimens agreeing with *E. argentula*, *unca*, and other species of the genus have been received by Mr. Haworth from Georgia, in which no differences can be traced beyond those that constitute the slightest varieties; it is true that many North American coleoptera also are the same as our own, from which we might imagine that they had been by accident introduced into this country, and from the congeniality of the climate have become naturalized; but it is also an undeniable truth that some of the wild plants of that continent are the same as our own,—a curious and interesting fact which it is not within our province to enlarge upon.

The plant is *Circæa lutetiana* (Enchanter's Nightshade).


1a
2
3
b
c
4
9
6
a
5
1*

141.

ALYSIA APII.

Order Coleoptera. Fam. Ichneumonidæ *Lat.*, *Leach.*

Type of the Genus Ichneumon Manducator *Panz.*

Alysia *Lat.*, *Leach.*—Ichneumon *Panz.*—Cryptus *Fab.*—Bracon *Jur.* —Cechenus *Ill.*

Antennæ inserted in front of the face, long, slender, submoniliform, pubescent, containing from 30 to 50 joints, basal joint obovate robust, 2nd globose, 3rd slender, 4th and following subquadrate, terminal ovate (fig. 1 a).

Labrum triangular, pilose, membranous at the apex (2).

Mandibles remote, lateral, not crossing each other, subquadrate, narrowed towards the base, tridentate at the apex (3 & 1*).

Maxillæ with the lobes coriaceous, external one membranous at the edge, pilose; internal one acute. *Palpi* very long, pilose, 6-jointed, basal joint short slender, 2nd short robust, 3rd and 4th long, the former robust, 5th nearly as long as the 6th (4).

Mentum elongated, emarginate, (5 a). *Palpi* long robust pilose 4-jointed, 2nd joint the thickest (b). *Lip* subcoriaceous, hollow, rounded, broader than the mentum (c).

Head *transverse.* Ocelli 3 *in triangle.* Eyes *small lateral;* (1* *front view of the head*). Thorax *ovate.* Abdomen *attached by a very short peduncle, rugose at the base, slightly depressed in the males, somewhat compressed in the females, 7- or 8-jointed and truncated at the apex.* Oviduct *somewhat robust, in some longer in others shorter than the abdomen,* (6, *abdomen of a female in profile*). Wings *pubescent, the nervure not continued round, with 1 marginal, 3 submarginal, and two discoidal cells* (9). Stigma *sometimes very much elongated.* Inferior wings *with nervures at the base.* Legs, *hinder ones a little the longest.* Tibiæ *simple.* Tarsi 5-*jointed.*

Apii *Nobis.*

Black, smooth, shining. Head not very large; trophi ochraceous; antennæ very long pubescent, basal joint beneath and 2nd joint ferruginous. Thorax with a deep fovea between the wings; metathorax punctured. Abdomen piceous slightly pubescent, basal joint rugose punctured, 2nd rufous at the base. Oviduct very short, nearly obsolete. Legs ochraceous, apex of tarsi fuscous. Wings pubescent, very iridescent, superior large; stigma extending the greater portion of the costa, fuscous, nervures of the same colour.

In the Cabinet of the Author.

Alysia approaches very near to *Bracon*, especially in the structure of the wings, which are however alike in both sexes; the labial and maxillary palpi have a joint more than those of *Bracon*, and its tridentate jaws so remarkably situated, at once distinguish it from all other genera.

Of this singular genus only one species appears to have been described, and that has never been recorded as British: we have had the good fortune to discover eight others of which we shall give short descriptions, first observing that all, excepting No. 6, are black and shining, with ochraceous legs.

I. Stigma short, subtrigonate.

A Oviduct shorter than the body.

1 A. Manducator, *Panz. Faun. Germ. fas.* 72, *n.* 4, *fem.*—Antennæ very pubescent in the female, rather robust, ferruginous at the base.

2 apicalis *Nob.*—Mandibles black at their apex.

3 similis *Nob.*—Smaller, antennæ black at their base, mandibles entirely ferruginous.

B Oviduct as long as the body.

4 Pratellæ *Nob.*—Black, shining, legs trophi and base of antennæ ferruginous. Head very large. Antennæ very long, slightly pubescent. Stigma narrow.

5 gracilis *Nob.*—Oviduct not longer than the body. Head small, ferruginous next the eyes. Antennæ entirely piceous.

6 pallida *Nob.*—Dull ochraceous, eyes and a spot between them black; metathorax and base of abdomen black; apex piceous; antennæ and nervures of wings fuscous.

II. Stigma elongated.

7 Apii *Nob.*

8 pubescens *Nob.*—Oviduct short, but visible. Smaller than the last, covered with pale pubescence, especially the thorax.

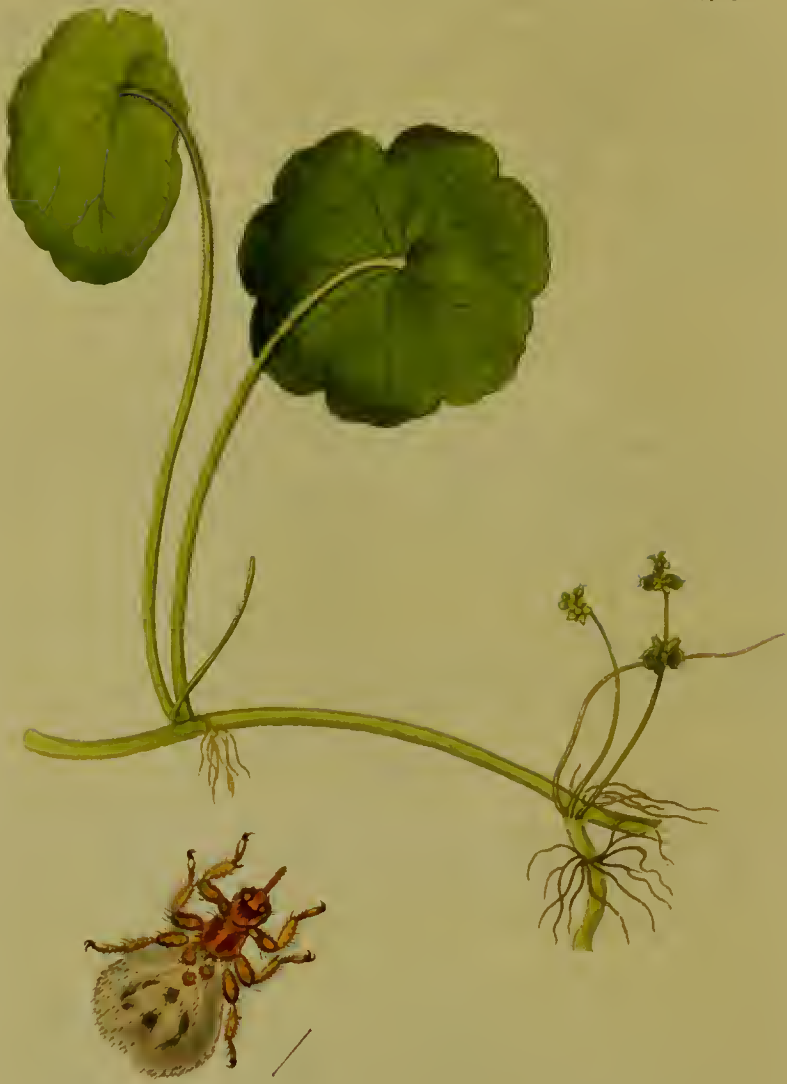
9 minuta *Nob.*—Small, nervures of the wings very strong and black.

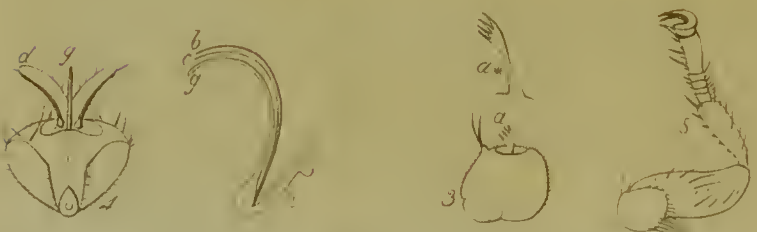
A. Manducator is not uncommon upon umbellate plants in meadows, the dung of animals, &c.

A. Pratellæ. Found with some *Cynipsidæ* the end of September in the park of Heron Court, Hampshire, by my esteemed friend the Hon. Charles A. Harris, who discovered them concealed between the collar and gills of very young mushrooms.

A. Apii. For specimens of this insect and their history I am indebted to a lady who found the larvæ feeding upon the parenchyma of celery leaves the 30th Sept.; on the 11th Oct. they had changed to shining oval pupæ of a dull ochre colour, having very much the appearance of a shell (*Turbo Chrysalis* of Turton); the imago appeared the June following.

Our insect receives its specific name from the genus of plants to which it is destructive; and *Apium graveolens* (Wild Celery) being an indigenous species, it is figured in the plate.





[illegible] London [illegible]

142.

MELOPHAGUS OVINUS.

The Sheep-louse.

ORDER Omaloptera *Leach.*   FAM. Hippoboscidæ *Leach.*

Type of the Genus Hippobosca Ovina *Linn.*

MELOPHAGUS *Lat., Leach, Olfers.*—Melophila *Nitzsch.*—Hippobosca *Linn., Fab., &c.*

Antennæ coriaceous, remote, nearly concealed in a cavity before the eyes, subglobose, pubescent, with a few bristles on the internal side, near the margin of the orifice in front, from which arises a membranous flat style divided into four teeth (fig. 3. the antenna; a, the style; a*, the same taken out to show its whole length).

Labrum horny long slender incurved hollow, receiving the tongue (2 b).

Tongue as long as the labrum, very slender (2 c).

Lip hollow as long as the labrum, receiving it and the tongue, dilated at the base (2 g, and 4 g).

Maxillæ? rigid pilose, as long as the head, united above at their base, somewhat hollow and incurved (4 d).

Head *corneous above, coriaceous beneath, with a large cavity on each side to receive the anterior coxæ* (4, *underside of head*). Eyes *narrow lateral.* Ocelli *none.* Thorax *undivided, with all the legs attached, having* 2 *spiraculæ on each side and being slightly produced where the wings arise in the other genera.* Wings *none.* Scutellum *nearly obsolete.* Abdomen *large, inflated, coriaceous, semitransparent, with* 6 *spiracles down each side.* Legs *of equal size, short robust pilose.* Tibiæ *spurred.* Tarsi 5*-jointed,* 4 *first joints transverse,* 5*th long.* Claws *recurved at the base.* Pulvilli *slender* (8, *a fore-leg*).

Larva *nourished in the abdomen of the mother, and excluded after transformation.* Lat.

Pupa *inclosed in the indurated skin of the larva, suborbicularly impressed at one end.* Lat.

OVINUS *Linn. Faun. Suec.* 1924.

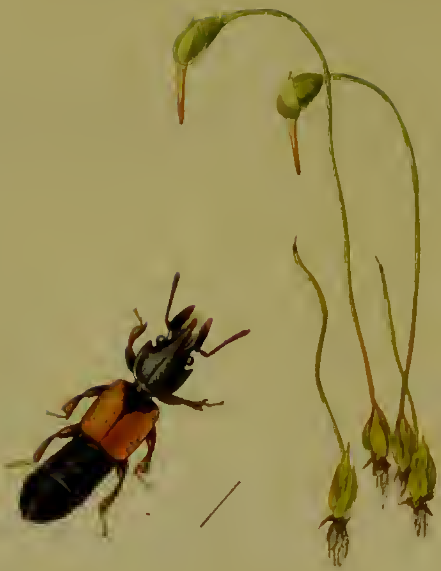
Covered with rigid hairs. Head proboscis and thorax ferruginous. Abdomen dull yellowish with a heart-shaped spot on each side and a less perfect one forming a triangle near the base ferruginous. Legs subochraceous. Tarsi ferruginous. Claws black.

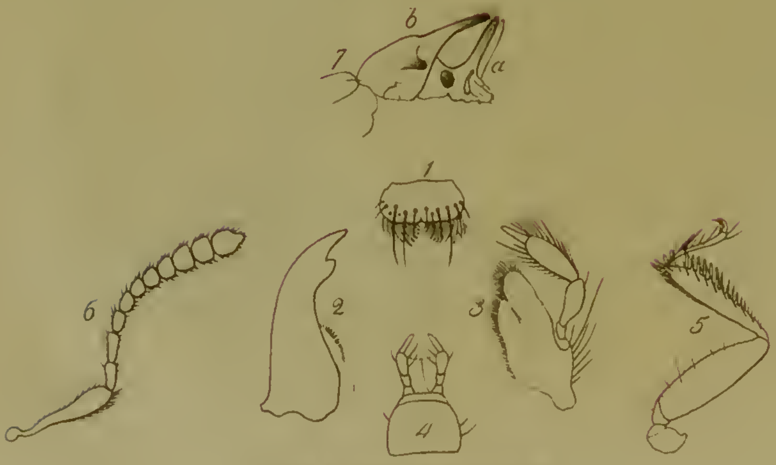
In the Author's and other Cabinets.

THE curious antennæ of *Melophagus Ovinus* have been already alluded to in folio 122, and we wish now further to call the attention of the student to their remarkable structure, as they appear hitherto to have escaped observation, and they are scarcely analogous to any other antennæ unless it be to those of the *Libellulidæ*. The antennæ are of a leathery substance, somewhat globose covered with short hair, being hollow part of the way down, at the bottom of the cavity is attached a thin process, cleft at the apex and probably moveable; but from its minuteness it is difficult to ascertain whether it can be exserted and withdrawn at the will of the animal. The trophi exhibited at fig. 2. are particularly long and very much bent; although this insect is one of the few that is apterous in both sexes, the thorax is slightly produced where those organs are attached in the neighbouring genera.

Our insect is one of the many that attack sheep, and is found I believe all the year round, our friend Mr. Carpenter having sent us some as early as March. In the 1st volume of the *Introduction to Entomology* we find the following passage relating to our subject. "But of all our cattle, none are more valuable and important to us than our *flocks;* to them we look not only for a principal part of our food, but also for clothing and even light. Thick as is their coat of wool, it does not shield them from the attack of all-subduing insects: on the contrary it affords a comfortable shelter to one of their enemies of this class, regarded by Linné as a species of *Hippobosca*, but properly separated from that genus by Latreille under the name of *Melophagus*. This is commonly called the sheep-louse, and is so tenacious of life that we are told by Ray it will exist in a fleece twelve months after it is shorn, and its excrements are said to give a green tinge to the wool very difficult to be discharged."

The plant figured, *Hydrocotyle vulgaris* (called Pennyrot, Sheep-killing Pennygrass, Water Pennywort, White-rot, &c.) is supposed by some to cause the rot in sheep.




b
7
a
1
6
2
3
4
5

[illegible]

BLEDIUS SKRIMSHIRII.

Order Coleoptera. Fam. Staphylinidæ *Lat.*, *Leach.*

Type of the Genus Staphylinus tricornis *Payk.*

Bledius *Leach.* Staphylinus *Payk.*, *Oliv.*, *Herbst.*, *Panz.* Oxytelus *Grav.*, *Lat.*, *Gyll.*, *Leach.*

Antennæ inserted before the eyes, geniculated, subclavate, pilose, 11-jointed, basal joint long clavate, 2nd and 3rd nearly of equal length, the 4th and 3 following subglobose, the remainder more robust, cup-shaped, terminal joint subovate (fig. 6).

Labrum transverse oval, anterior margin sinuated, producing horny bristles, some of which are furcate, and from the upper surface arises a transverse line of moveable long bristles (1).

Mandibles long and bent, with a strong tooth on the internal margin near the apex, membranous near the base and ciliated (2).

Maxillæ long, strongly ciliated, bilobed, internal lobe very thin.

Palpi large 4-jointed, basal joint minute, 2nd large clavate, 3rd longer very pilose, elongate ovate, 4th slender, elongate cylindric (3).

Mentum semicircular. *Lip* rather long, slightly notched, ciliated.

Palpi arising from short membranous scapes near the base of the lip, 3-jointed, basal joint short, 2nd long clavate, 3rd slender cylindric (4).

Head *rather long, armed with lateral horns, very small, or wanting in the females.* Eyes *small, very prominent.* Thorax *of the males armed with a long horn in front.* Scutellum *minute.* Coleoptra *quadrate, angles rounded.* Abdomen *alike in both sexes, depressed, margined.* Wings *long and ample.* Tibiæ, 4 *anterior short compressed, armed with strong teeth, posterior pair the longest and slenderest.* Tarsi 4-*jointed, penultimate joint clothed with long hair, terminal joint longer than the others united, pilose.* Claws *long* (5, *a fore leg*).

Skrimshirii *nob.*

Male. Black glossy, elytra ochraceous. Head black, with the anterior part produced on each side, forming 2 long thin vertical horns, castaneous at their apex. Trophi ferruginous. Thorax scutiform, convex, black, shagreened, having large punctures thinly scattered and a channel down the middle, produced at the anterior angles, and in the front over the head in the form of a horn, castaneous and pilose at the apex. Elytra sparingly and coarsely punctured, bright ochre, the scutellum and a considerable triangular space surrounding it blackish. Abdomen black shining, very minutely punctured, apex ferruginous. Antennæ and legs castaneous, tarsi and hair on tibiæ bright ochre (7, head and thorax in profile).

Var. β. Horns on head and thorax shorter. Elytra dull castaneous. Abdomen slightly pilose.

In the Cabinets of Mr. Skrimshire, Mr. Stephens, and the Author.

Dr. Leach first proposed separating *Bledius* from *Oxytelus;* but no characters have hitherto been given: the curious horns that arise from the head and thorax of the male are sufficient to distinguish it from that genus.

We can now record two species.

1. B. tricornis *Payk., Oliv. tab.* 6. *f.* 56. *a. b.*—armatus *Panz. Faun. Germ.* 66. 17. *Trans. Ent. Soc. p.* 97. *tab.* 7. *f.* 3.

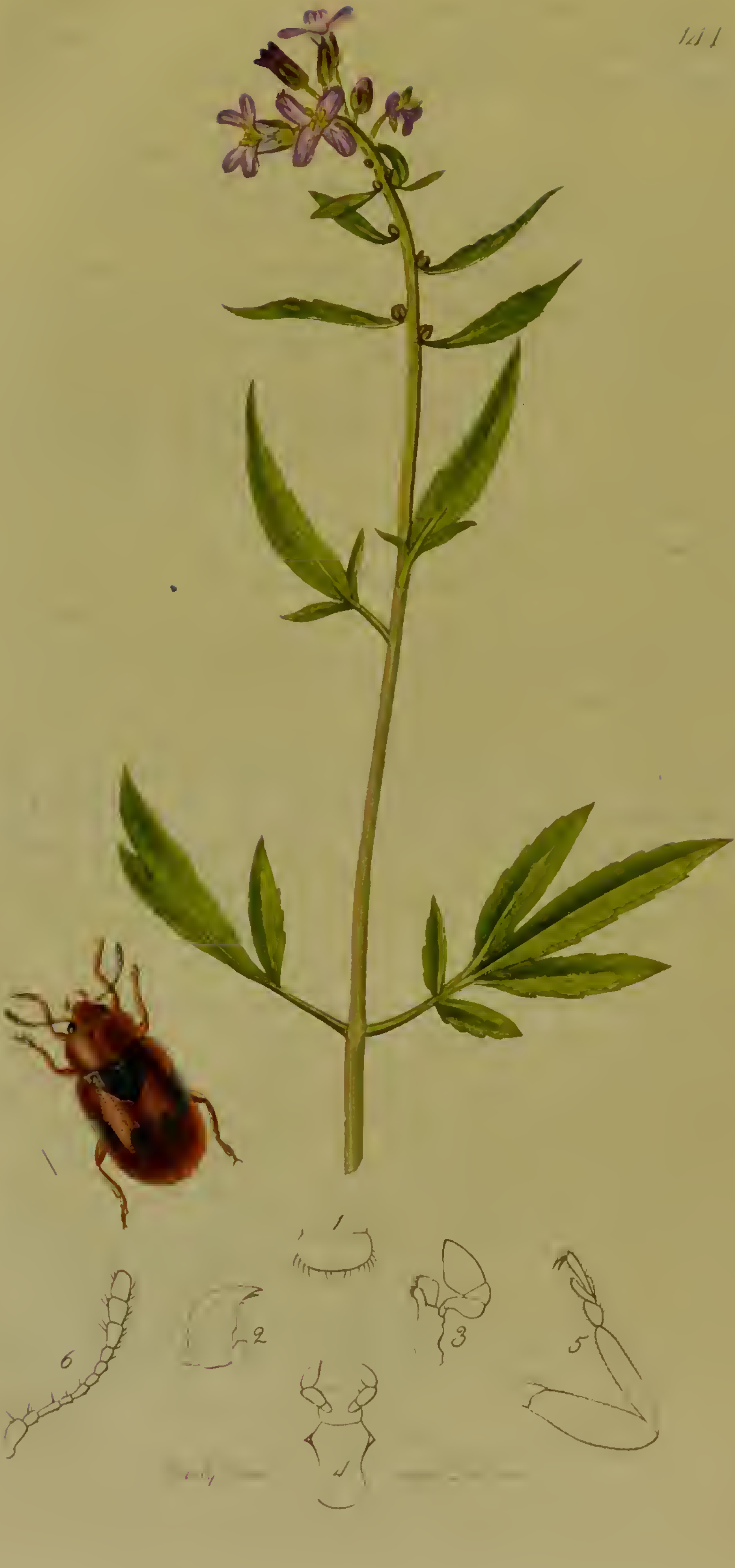
About 16 years ago Mr. G. Skrimshire first discovered this insect on the banks of rivers in Cambridgeshire, and it was afterwards detected by the Rev. T. Skrimshire and the late Rev. I. Burrell from the end of April to the middle of July on the Sandhills at Cley, Norfolk.

2. B. Skrimshirii *nob.*

It is with sincere pleasure that we avail ourselves of the opportunity of naming this fine and remarkable insect after its captor, the Rev. T. Skrimshire, whose zeal and liberality have enabled us to present our readers with this striking novelty, as well as his own observations upon the economy of the genus. "They were all taken upon the sea shore at Holkham. The live ones in crevices in the sand or rather loam of which the sea banks are raised and covered with *rejectamenta maris.* The dead male which I sent you was found upon the dry sandy hills in company with myriads of *B. tricornis* all dead, and deposited there by the wind, though I have not yet discovered a regular habitat of the latter insect in this neighbourhood. In the month of June I have found many of the *B. tricornis* in the same situation, under the *rejectamenta maris* in crevices of the sea bank, mostly females: I conceive they get into these situations after the regular season is over to deposit their eggs, or to hibernate, as they are by no means so lively as represented by our late friend Mr. Burrell in the Transactions of the London Entomological Society, and are a month later, though I have taken *B. tricornis* at Wisbeach still later, in July, and in their proper habitat."

Funaria hygrometrica (Little Golden-locks, Golden Maidenhair), magnified about 4 times, is figured in the plate.

141



[illegible]

CACIDULA SCUTELLATA.

Order Coleoptera. Fam. Coccinellidæ *Lat., Leach.*

Type of the Genus Chrysomela pectoralis *Fab.*

Cacidula *Meg.* Chrysomela *Fab., Panz.* Strongylus *Herbst.* Silpha *Marsh.* Rhysobius *Leach's MSS.*

Antennæ as long as the thorax, inserted at the anterior margin of the eyes, remote, clavate, pilose, 11-jointed, basal joint large, 2nd small robust, 3rd long slender, 4th shorter than the 5th, the 6th, 7th and 8th oval, the remainder forming a more robust mass, the terminal joint being truncated (fig. 6).

Labrum transverse, oval, ciliated (1).

Mandibles bent at the apex and bifid, internal edge very thin and transparent (2).

Maxillæ rather long, bilobed, lobes small ciliated. *Palpi* very robust, clavate, naked, 4-jointed, basal joint minute, 2nd clavate, 3rd wedge-shaped, 4th trapezate truncated obliquely (3).

Mentum large elongated, dilated and angulated anteriorly. *Labium* suborbicular. *Palpi* short, robust, naked, inserted upon the lip, 3-jointed, basal joint minute, 2nd subclavate, 3rd ovate-conic (4).

Head *trigonate, sunk up to the eyes.* Eyes *lateral.* Thorax *transverse, convex, rounded behind, posterior angles not rounded.* Coleoptra *oval.* Wings 2, *longer than the elytra.* Scutellum *minute.* Tibiæ *simple.* Tarsi *all 3-jointed, 2nd joint bilobed, 3rd long slender.* Claws *simple.* Pulvilli *none* (5, *a fore leg*).

Scutellata *Herbst. Fab. Ent. Syst. v.* 1. *pars* 1. *p.*327. *n.* 101.

Yellowish castaneous, shining, clothed with short yellow hair. Head punctured. Eyes black, club of antennæ blackish. Thorax rather coarsely punctured, with a plain suture down the centre, the sides margined. Elytra rather coarsely punctured and having about 8 deeply punctured and irregular striæ on each; Scutellum, a large triangular space in the centre at the base of the elytra, a spot on each side, midway, and 2 round spots near the suture towards the apex, dull black.

In the Cabinets of Mr. Sparshall, Mr. Cooper, and the Author.

This genus, which has long stood in our cabinets with Dr. Leach's MS. name *Rhysobius*, has been published with the name we have adopted. The Baron Dejean has included *Nitidula litura* Fab., in which he has followed Schönherr; but it appears rather to belong to the genus *Scymnus* of Herbst.

1. C. pectoralis *Fab. Panz.* 78. 5.—rosea *Marsh. p.* 123. 25.

An insect we frequently meet with on grass and plants by the sides of ditches and on marshes during the spring and summer.

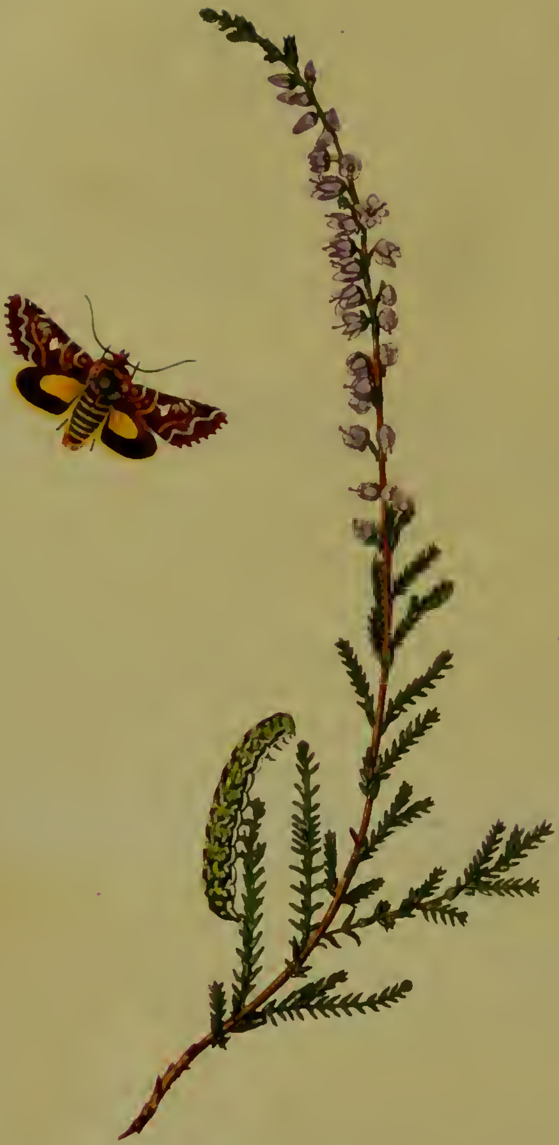
2. C. scutellata

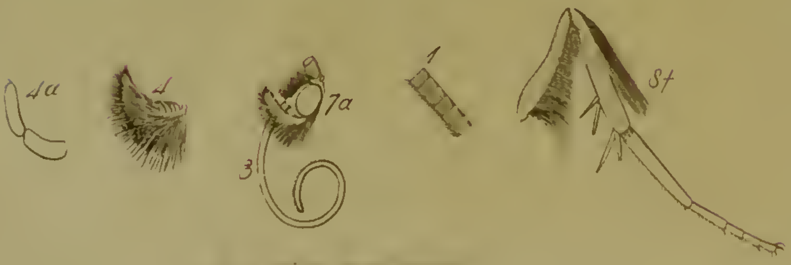
Was not known to inhabit Britain until Mr. Joseph Sparshall and myself, in an entomological excursion to Horning marshes in September 1819, found several under the bark of a dead tree; but in the month of March of the present year it was taken upon a gate post in Plaistow marshes by Abraham Cooper, Esq.

This is the first example we have given of Latreille's section *Trimera*, with all the tarsi 3-jointed, it consequently associates with the family *Coccinellidæ*, an appellation that we prefer to *Aphidiphagi* recently employed in the "*Familles Naturelles*," because in forming the Linnæan genera into families we cannot do less than retain the names of that illustrious naturalist; and we cannot do better to promote the extensive and philosophic views taken of entomology at this period, than by making names long established and universally known, the stepping-stone to those which have been but recently introduced.

For a specimen of the plant figured, *Dentaria bulbifera* (Bulbiferous Coral-wort), we are indebted to Mr. G. Charlwood, who gathered it the beginning of last May at Blackwood's old locality, Harefield Park, Middlesex.

115





ANARTA MYRTILLI.

The beautiful Yellow Underwing.

Order Lepidoptera. Fam. Noctuadæ *Lat.*, *Leach.*

Type of the Genus Noctua Myrtilli *Linn.*

Anarta *Och.* Phalæna Noctua *Linn.* Noctua *Fab.*, *Hüb.*, *Haw.*

Antennæ alike in both sexes, rather long, slender, filiform, setaceous, covered with scales above, pubescent beneath, basal joint robust ovate (fig. 1, a few joints magnified).

Maxillæ as long as the antennæ, furnished with tentacula towards the apex (3).

Labial palpi extending a little beyond the head (7 a), very hairy (4), 3-jointed, basal joint robust, slightly curved, 2nd of the same length rather less robust, 3rd small nearly obsolete (4 a).

Head *very small.* Eyes *small pubescent.* Ocelli 2 (*7 a, the head in profile*). Thorax *not crested, covered with hairy scales.* Abdomen *short robust, ciliated on the sides and at the apex.* Wings *deflexed when at rest; superior lanceolate, inferior small.* Legs, *anterior the shortest, the tibiæ with a flat strong spine on the internal side, middle and posterior tibiæ very hairy towards their base, terminated by spurs, the latter having a pair also above the apex.* Tarsi *very long, the basal joint nearly as long as the tibiæ* (8 †, *a hind leg*).

Caterpillars *naked with 6 pectoral, 8 abdominal and 2 anal feet.*

Myrtilli *Linn. Faun. Suec.* 1168. *Haw. Lep. Brit.* 162. 9.

Head thorax and superior wings blackish, variegated with orange red and gray; two obscure curved gray lines near the base of the superior wings, a white irregular spot in the middle and an obscure kidney-shaped stigma, a dull whitish waved line beyond the middle and a white sinuated line nearer the posterior margin, cilia white, spotted with rufous: Inferior wings pale fulvous, with a broad margin of fuscous black extending round: Abdomen black yellow on the sides with 6 or 7 yellowish transverse stripes; tuft at the apex reddish.

In the Author's and other Cabinets.

OCHSENHEIMER has placed *Anarta* next to *Plusia*, but we are not prepared to say whether that is its natural situation: the nearly obsolete joint of the palpi and very long basal joint of the posterior tarsi are different to any of the genera we have hitherto figured.

Three species only of this pretty genus have been discovered in Britain, although eight are known upon the Continent. They are day fliers, and love the sunshine.

1. A. Myrtilli.

The caterpillars are found from the end of July to October, feeding upon the heath that accompanies the figure, in Kent, Hants, and Devon. The imago is seen flying about heaths from the beginning of June to the end of August: from its swift and irregular flight it resembles *Plusia*, and is difficult to take unless it be hovering over a flower. Mr. Joseph Standish having had one live through the winter in the chrysalis state which came out the June following, he thinks there are not two broods in a year as is generally believed.

2. A. Cordigera *Thunb. Esp.*—albirena *Hüb., Haw.* 163. 10.

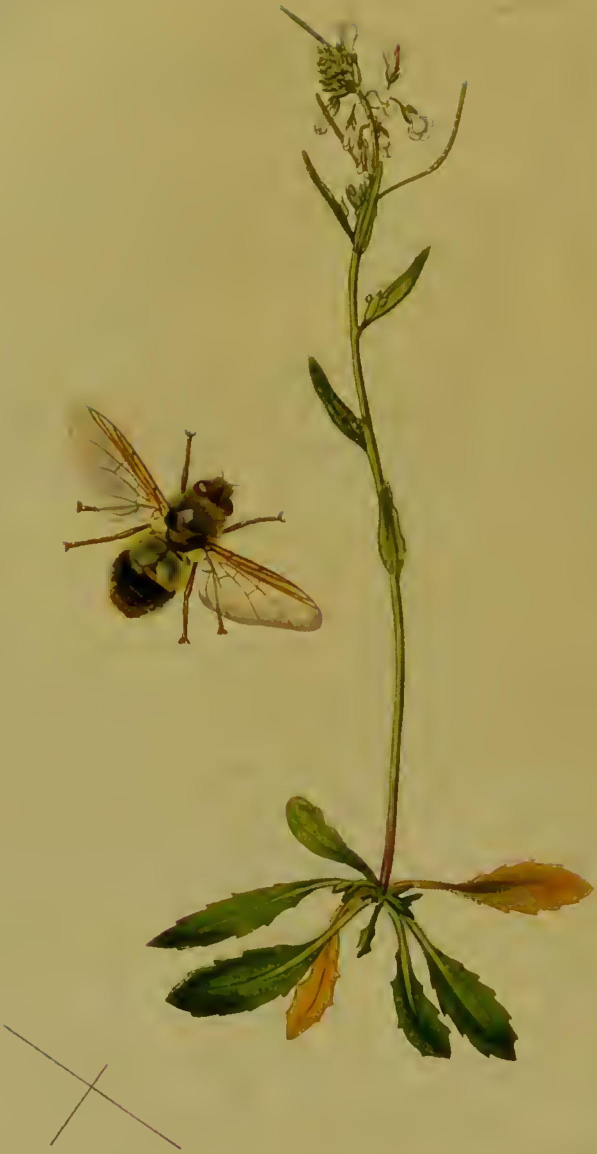
This insect was taken in Norfolk in June by the late Mr. Burrell, and is preserved in the cabinet of A. H. Haworth, Esq.; and had it not appeared to us to be merely a variety having the prevailing colour of the wings fuscous instead of crimson ferruginous, we should have given the preference to it for an example of the genus: perhaps the larvæ may throw some light upon the subject, for that figured by Mr. Donovan (vol. 7. pl. 221) is very different in markings to ours, which was in its last skin at the time it was drawn.

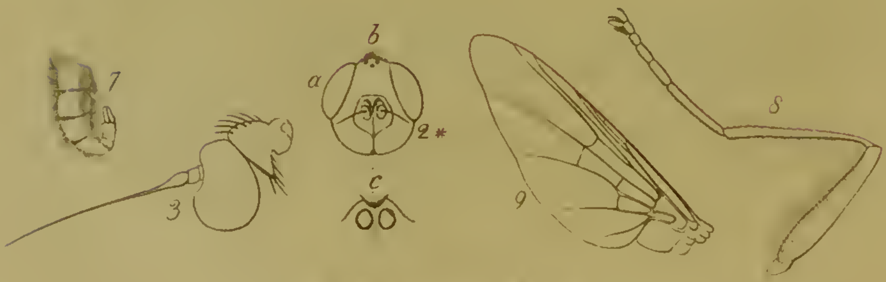
3. A. Arbuti *Fab., Don. Brit. Ins.* 10. 343. 3.—fasciola *Esp.* —Helioca *Hüb.*

The end of May and beginning of June this pretty little noctua is seen flying in meadows and even by the road side in grassy places.

The plant is *Calluna vulgaris*, Erica vulgaris *Linn.*, (Common Ling).

146





[illegible]

GASTEROPHILUS SALUTIFERUS.

ORDER Diptera. FAM. Œstridæ *Leach.* Muscides *Lat.*

Type of the Genus Œstrus Equi *Clark.*

GASTEROPHILUS *Leach.* Gastrus *Meig.* Œstrus *Linn., Fab., Clark.*

Antennæ approximating, inserted in a cavity in the centre of the face, membranous, 5-jointed, basal joint somewhat cup-shaped, pilose, 2nd very large kidney-shaped, 3 following forming a long awl-shaped naked seta, the basal joint of which is nearly obsolete, the 2nd quadrate (fig. 3).

Labrum, Tongue, Mandibles and *Maxillæ* none.

Palpi? 2, minute, exarticulate, globose, naked, inserted below a small tubercle at the bottom of the head (2 * c, detached and very highly magnified)

Lip none.

Mouth *none or concealed.* Head *vertical, short and blunt* (2 *, *a front view showing the situation of the antennæ*). Eyes *lateral, oval, alike in both sexes* (*a*). Ocelli 3, *placed close together in a triangle upon the crown of the head* (*b*). Scutellum *large.* Abdomen *with its apex inflexed, very much elongated and attenuated in the female, being terminated by a horny tube* (7, *abdomen of a female in profile*). Wings *divaricating, punctured, containing* 12 *or* 13 *cells, the costal nerve not surrounding the wing, the posterior margin without transverse nervures* (9). Squamulæ *small, not concealing the* Halteres. Legs *very slender long and hairy.* Tibiæ *simple, very long and slender.* Tarsi *as long as the tibiæ,* 5*-jointed, basal joint the longest.* Claws *long, simple.* Pulvilli *large, bilobed, with a strong bristle between them* (8, *a fore leg*).

Larvæ *cylindrical, mouth armed with* 2 *hooks, the segments of the body furnished with a double row of short spines; living in the stomachs of herbivorous animals.*

SALUTIFERUS *Clark's Supp. to an Essay on the Bots.*

Female. Black, very pubescent, shining, punctured. Head covered with short ochraceous hair. Eyes dull castaneous. Thorax and scutellum covered with bright ochraceous pubescence, rather black at the base of the wings. Abdomen clothed with long straw-coloured pubescence (especially at the base) excepting the 2nd segment on which it is black. Wings slightly fuscous, yellowish brown at the costa and base, costal nervure brown, the others paler. Squamulæ opaque-white. Legs reddish brown, clothed with paler pubescence.

Male brighter and more robust, the thorax orange, the black spot on the thorax at the base of the wings generally more distinct. Abdomen towards the apex orange, legs clothed with brown hairs.

In the Cabinets of Mr. Clark and the Author.

THE insects that form the genus *Gasterophilus* are very remarkable for their economy: the eggs, or young caterpillars, are swallowed by the horse, and remain in the stomach of that valuable animal, exposed to a temperature of 102 degrees of Fahrenheit, until full grown, when they pass through, and falling upon the ground become pupæ, and afterwards flies, the females exhibiting an instinct in selecting the peculiar places upon the animal to deposit her eggs, which is truly astonishing. Their habits are not only widely different from those of the group we have given at folio 106, but the perfect insects may be without difficulty separated by the nervures of their wings. I suspect that portion of the antennæ which I have called the 2nd joint in the characters of *Œstrus* is only the narrowed base of the large joint, and the basal joint of the seta in our present genus may be nothing more than the scape.

Five species have been recorded as British.

1. G. Equi *Clark, pl.* 1. *f.* 1-16.—Bovis *Linn.*

It is found in August and September flying about horses and in heathy districts, which I was not aware of until this autumn, when in the Isle of Wight I saw 8 or 10 flying round a small space where no cattle were, they looked like bees, and made a considerable humming with their wings.

2. G. salutiferus et salutaris *Clark, pl.* 1. *f.* 33-36.

For specimens of this rare insect I am indebted to Mr. Bracey Clark, who found the larvæ in the stomach of a horse at the entrance of the pylorus, and taking them from their situation, they were forced down the throat of his own horse, and received again on their exit after some months; and from the pupæ the identical male here figured, as well as females, were produced.

3. G. hæmorrhoidalis *Linn. Clark, pl.* 1. *f.* 17-23.

Seen flying about the mouths of cattle upon commons in the month of August.

4. G. nasalis *Linn.*—veterinus *Fab., Clark, pl.* 1. *f.* 24-27. *Panz.* 107-21.

5. G. Clarkii *Leach's Arrangement, pl.* 2.

Was taken by Dr. Leach at Kingsbridge, Devon, and named after the gentleman whose Essay upon the subject we strongly recommend to the perusal of the student.

The plant is *Arabis thaliana* (Common Wall Cress).